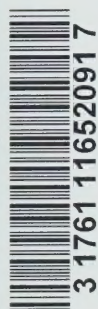


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ENVIRONMENTAL ASSESSMENT BOARD

VOLUME: XXXVIII

DATE: Thursday, August 25th, 1988

BEFORE: M.I. JEFFERY, Q.C., Chairman

E. MARTEL, Member

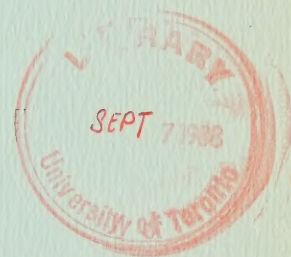
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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER of an Order-in-Council
(O.C. 2449/87) authorizing the
Environmental Assessment Board to
administer a funding program, in
connection with the environmental
assessment hearing with respect to the
Timber Management Class
Environmental Assessment, and to
distribute funds to qualified
participants.

Hearing held at the Ramada Prince Arthur
Hotel, 17 North Cumberland St., Thunder
Bay, Ontario, on Thursday, August 25th, 1988,
commencing at 9:30 a.m.

VOLUME XXXVIII

BEFORE:

MR. MICHAEL I. JEFFERY, Q.C.	Chairman
MR. ELIE MARTEL	Member
MRS. ANNE KOVEN	Member

A P P E A R A N C E S

MR. V. FREIDIN, Q.C.)	MINISTRY OF NATURAL
MS. C. BLASTORAH)	RESOURCES
MS. K. MURPHY)	
MR. B. CAMPBELL)	MINISTRY OF ENVIRONMENT
MS. J. SEABORN)	
MR. R. TUER, Q.C.)	ONTARIO FOREST INDUSTRY
MR. R. COSMAN)	ASSOCIATION and ONTARIO
MS. E. CRONK)	LUMBER MANUFACTURERS'
MR. P.R. CASSIDY)	ASSOCIATION
MR. J. WILLIAMS, Q.C.	ONTARIO FEDERATION OF
	ANGLERS & HUNTERS
MR. D. HUNTER	NISHNAWBE-ASKI NATION
	and WINDIGO TRIBAL COUNCIL
MR. J.F. CASTRILLI)	
MS. M. SWENARCHUK)	FORESTS FOR TOMORROW
MR. R. LINDGREN)	
MR. P. SANFORD)	KIMBERLY-CLARK OF CANADA
MS. L. NICHOLLS)	LIMITED and SPRUCE FALLS
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MR. D. MacDONALD	ONTARIO FEDERATION OF
	LABOUR
MR. R. COTTON	BOISE CASCADE OF CANADA
	LTD.
MR. Y. GERVAIS)	ONTARIO TRAPPERS
MR. R. BARNES)	ASSOCIATION
MR. R. EDWARDS)	NORTHERN ONTARIO TOURIST
MR. B. McKERCHER)	OUTFITTERS ASSOCIATION
MR. L. GREENSPOON)	NORTHWATCH
MS. B. LLOYD)	

APPEARANCES: (Cont'd)

MR. J.W. ERICKSON, Q.C.) MR. B. BABCOCK)	RED LAKE-EAR FALLS JOINT MUNICIPAL COMMITTEE
MR. D. SCOTT) MR. J.S. TAYLOR)	NORTHWESTERN ONTARIO ASSOCIATED CHAMBERS OF COMMERCE
MR. J.W. HARBELL) MR. S.M. MAKUCH)	GREAT LAKES FOREST PRODUCTS
MR. J. EBBS	ONTARIO PROFESSIONAL FORESTERS ASSOCIATION
MR. D. KING	VENTURE TOURISM ASSOCIATION OF ONTARIO
MR. D. COLBORNE	GRAND COUNCIL TREATY #3
MR. R. REILLY	ONTARIO METIS & ABORIGINAL ASSOCIATION
MR. H. GRAHAM	CANADIAN INSTITUTE OF FORESTRY (CENTRAL ONTARIO SECTION)
MR. G.J. KINLIN	DEPARTMENT OF JUSTICE
MR. S.J. STEPINAC	MINISTRY OF NORTHERN DEVELOPMENT & MINES
MR. M. COATES	ONTARIO FORESTRY ASSOCIATION
MR. P. ODORIZZI	BEARDMORE-LAKE NIPIGON WATCHDOG SOCIETY
MR. R.L. AXFORD	CANADIAN ASSOCIATION OF SINGLE INDUSTRY TOWNS
MR. M.O. EDWARDS	FORT FRANCES CHAMBER OF COMMERCE
MR. P.D. McCUTCHEON	GEORGE NIXON

(iii)

APPEARANCES: (Cont'd)

MR. C. BRUNETTA

NORTHWESTERN ONTARIO
TOURISM ASSOCIATION

I N D E X O F P R O C E E D I N G S

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184	1965 Forest Resources Inventory map of Part 3 of Dryden Paper Management Unit.	6337
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190	Hand-drawn diagram entitled: Life Curve for Trees.	6377

1 ---Upon commencing at 9:30 a.m.

2 THE CHAIRMAN: Good morning, everyone.

3 Thank you. Please be seated.

4 MR. CAMPBELL: Thank you, Mr. Chairman.

5 Mr. Chairman, Mr. Freidin has advised me
6 this morning that he will be considering the additional
7 request that I advised the Board of yesterday and will
8 let me know in due course and that's perfectly
9 satisfactory. So we won't be dealing with that this
10 morning.

11 JOHN EDWARD OSBORN,
12 KENNETH A. ARMSON,
13 JOHN RANDOLPH CARY,
 DAVID GORDON, Resumed

14 CONTINUED CROSS-EXAMINATION BY MR. CAMPBELL:

15 Q. Mr. Armson, I just want to turn for a
16 moment - at the risk of testing your patience severely
17 or, perhaps more importantly, the Board's patience
18 severely - to be sure I am correct in my understanding.

19 Could you turn up page 249 of Exhibit 135
20 which is the Panel 4 evidence.

21 MR. ARMSON: A. Yes, I have page 249.

22 Q. 249. Thank you. Am I correct in my
23 understanding of yesterday's evidence - I think it will
24 be found spread a little bit through the transcript, so
25 I want to kind of pull it together to make sure I am

1 correct in my understanding - am I correct in my
2 understanding of yesterday's evidence that with respect
3 to Crown lands, the land area associated with MNR's use
4 of the term harvest with no renewal is shown on page
5 249 of Exhibit 135 as being the difference between the
6 upper line, which shows harvest on Crown land, and the
7 lower line which shows regeneration treatments on Crown
8 land?

9 A. No, I would not say that.

10 Q. All right. Where did I misunderstand
11 yesterday's testimony?

12 A. Yesterday I had used the term renewal
13 and then I referred to the Class EA Document and, in
14 that document the use of the word renewal was to
15 include natural regeneration after, in this case,
16 harvest deplete.

17 On page 249, Document 28, what is
18 quantitatively shown there is merely the area cut and
19 the area treated for those years from 1974-1986. I
20 would not from that graph, that figure, use the word
21 renewal to infer -- or infer anything about renewal
22 from that. It shows nothing more than areas harvested
23 and areas treated.

24 THE CHAIRMAN: Mr. Armson, what about the
25 additional line that was put on the other exhibit, the

1 exhibit that was put up, that was a blue line that
2 showed the difference between the line which depicts
3 the regeneration treatment and the natural
4 regeneration.

5 MR. ARMSON: That was an assumed -- from
6 the FPP, that was an assumed area of 130,000 hectares
7 as I recall -- or acres, sorry, that was put in there
8 and fine that is, as with any assumptions the line and
9 it has exactly that value.

10 THE CHAIRMAN: Okay. But is there any
11 significance between that upper line and the harvest
12 cut, the difference between those two in terms of your
13 definition?

14 MR. ARMSON: No. The problem, Mr.
15 Chairman, is...

16 THE CHAIRMAN: That represents, not the
17 gap, but that represents the difference between total
18 regeneration, whether natural or treated, and the
19 harvest cut; is that correct?

20 MR. ARMSON: That's right. The point I
21 think I was making, Mr. Campbell, is that the areas
22 that are depleted by harvesting with allowance for
23 small areas of roads and landings and so on, basically
24 revegetate and they revegetate to commercial tree
25 species of one kind or another, one or more -- or the

1 stocking levels of some kind.

2 The question of renewal, which is a broad
3 term, to then quantify it in terms of this, there is no
4 documentation in effect to clearly demark that amount.

5 MR. CAMPBELL: Q. So you are unable --
6 well, let me understand this. Then what you are saying
7 then is that MNR uses the term harvest with no renewal;
8 correct?

9 MR. ARMSON: A. Yes, and in that sense
10 we are harvesting with no renew -- and this is where we
11 get back into the use of that term with an inference or
12 implication that it is related to treatment. But, as I
13 say, in the document, renewal covered natural
14 regeneration after harvesting without any specific
15 conscious treatment.

16 Q. All right. So let me just take it in
17 shall chunks. MNR uses the term harvest with no
18 renewal. I didn't make it up, it is your term.

19 A. No, no, I agree.

20 Q. All right. And yesterday we looked
21 at Exhibit 29 and some mathematics on that and I was
22 referred to this as showing the mathematics that would
23 give me, as I understood it, some sense of area that
24 could be associated with that term harvest with no
25 renewal. And what you are saying is if that's the

1 impression that was created it was wrong?

2 A. I think I would have to say that
3 harvest with no renewal, meaning no renewal treatment,
4 could be interpreted as the difference between the
5 bottom line on page 249 and the top line 180, that's
6 what you are -- in response to your question.

7 Q. Well, you say it could be interpreted
8 that way. Is that an appropriate interpretation?

9 A. Well, if you accept renewal, harvest
10 with no renewal meaning harvest with no renewal
11 treatment.

12 Q. Well, that's -- I don't mean -- when
13 I say harvest with no renewal, I don't take it to mean
14 that nothing grows. I don't know if that is what you
15 are assuming, that when I say harvest with no renewal I
16 am assuming we have a blasted desert out there. I am
17 not assuming that.

18 A. No, no, I understand.

19 MR. MARTEL: Are you talking about the
20 regeneration gap--

21 MR. ARMSON: I'm trying to understand --

22 MR. MARTEL: --in other words, the term
23 that we put on this diagram some weeks ago, a gap
24 called a regeneration gap.

25 MR. CAMPBELL: Mr. Martel, all I am

1 trying to understand is a simple question that these
2 people use the term harvest with no renewal.

3 I thought I was directed yesterday, in
4 terms of being shown an area, after I was sorted out on
5 the mathematics and where I thought I could get it, I
6 was directed to 249. And I haven't seen the transcript
7 from yesterday and I know it is going to look a little
8 mixed up.

9 So I just want to be sure I can associate
10 an area of land as falling within what MNR - not me -
11 MNR calls harvest with no renewal. I thought that was
12 the difference between the two lines.

13 MR. ARMSON: No, the Page 249 is very
14 clear, the word renewal does not appear on the page.

15 MR. CAMPBELL: Q. I understand that.

16 MR. ARMSON: A. Okay. So if you were
17 looking for the documentation of the area,
18 documentation of the area and the degree to which it
19 has some level of regeneration to commercial tree
20 species outside of the areas that have been treated for
21 which we have some data -- see, I am a little puzzled,
22 Mr. Campbell, by your concern about the...

23 I think I have said we have used the word
24 renewal in two senses; once in the EA Document in a
25 general sense; and, secondly, harvest renewal --

1 without renewal where it relates to treatment.

2 Q. Well, you use the phrase in the EA
3 Document harvest with no renewal. You have got a graph
4 that shows from 74-86, the top line shows the amount of
5 harvest cut on Crown land?

6 A. That is correct.

7 Q. How much of that falls into the
8 category that MNR calls harvest with no renewal?

9 A. Well, that would be -- that is what I
10 am saying is if -- harvest with no renewal treatment
11 would be the difference there.

12 Q. So that if I - just a minute - if I
13 want to use a figure as to how much of the area cut
14 falls into MNR's terminology of harvest with no
15 renewal, am I correct in using the difference between
16 the two lines shown on the graph on page 249?

17 A. As long as it is understood that the
18 renewal equates with treatment and that's why the word
19 treat -- renewal is not used on that graph.

20 Q. Well, that's fine, but it is your
21 terminology. How do you understand it, is what I am
22 asking.

23 Don't worry about how I understand it.
24 Just tell me, when you use the term harvest with no
25 renewal, how much of this area that is shown as being

1 cut falls into what you call harvest with no renewal?
2 I didn't make the term up, Mr. Armson.

3 A. No, I understand. Mr. Campbell,
4 harvest with no renewal, renewal meaning no treatment
5 then is the area that is the difference between the
6 area treated, that is with renewal treatment, and the
7 total area harvested.

8 Q. So it is the difference between the
9 two lines on that graph?

10 A. Yes. But it more properly, as I
11 suggested, is defined as the area treated in relation
12 to the area harvested.

13 Q. All right. So that when you use the
14 term harvest with no renewal you define that as being
15 the difference between the harvest cut and the area
16 that has received a regeneration treatment?

17 A. Correct.

18 Q. And all of that is illustrated on
19 page 249?

20 A. Yes.

21 Q. And so that if I want a calculation
22 of the area of what you call harvest with no renewal, I
23 look at the difference between those two lines,
24 recognizing that what's below the bottom line it
25 constitutes what has received regeneration treatment?

1 A. Correct.

2 Q. Thank you, Mr. Chairman.

3 THE CHAIRMAN: But, not to complicate it,
4 that is misleading because there is a component of
5 natural regeneration at the same time, so that the gap
6 is not 100,000 hectares as shown on this, it is much
7 less.

8 MR. ARMSON: That's correct. The natural
9 regeneration factor is the numbers -- the 130,000 was
10 in fact a number related to the FPP. What in fact --
11 and I think Mr. Cary -- what the reality of the number
12 is is not there and quite candidly we don't know. What
13 we do have, of course, are from re-inventories for
14 given areas.

15 THE CHAIRMAN: So total regeneration is
16 is a combination of the both and, in fact, it will
17 include everything eventually except for the roads and
18 landings?

19 MR. ARMSON: That's it, yes, sir.

20 MR. CAMPBELL: I go a little farther than
21 that, Mr. Chairman.

22 Q. I am not trying to suggest, I am just
23 trying to understand the terminology and I think, Mr.
24 Armson, you would agree that over the bulk of that area
25 there is some sort of revegetation and the only thing

1 that we might argue about is how much actually goes to
2 achieve the objectives of sustained yield?

3 MR. ARMSON: A. I would agree.

4 Q. All right.

5 Now, as I look at that graph on page 249,
6 if I compare the difference which we have identified as
7 falling into your term harvest with no renewal, if I
8 compare that against regeneration treatment, it seems
9 to me it is fair for me to conclude that the area of
10 harvest with no renewal has exceeded the area with
11 regeneration treatment in virtually all years plotted
12 with the exception of 1986.

13 And I am assuming, by the way, that the
14 plots -- the plotting on the graph is really only for
15 '74, '77, '80, '83 and '86 and that basically you have
16 just joined those plotted points?

17 A. That's my understanding, yes.

18 Q. All right. And you would agree that
19 for the data that's shown for those years, that harvest
20 with no renewal has exceeded the area with regeneration
21 treatment in all years plotted with the exception of
22 1986?

23 A. That's correct. I believe the
24 aberration of 1977 was explained in relation to the
25 mills being -- I believe there was a strike at that

1 time.

2 Q. And if I wanted to compare, for
3 instance, the area of regeneration treatment, which is
4 the bottom line, against all depletions, I have to add
5 to the area of the harvest cut, fire and insect
6 depletions, which we talked about earlier in the
7 hearing as having a very substantial percentage of
8 total depletions?

9 A. That is correct.

10 Q. Thank you. Now, yesterday we
11 discussed site characteristics of various areas which
12 might end up being revegetated after cut but at least
13 there was the possibility that they would not return to
14 commercially desirable trees.

15 Do you recall that conversation, those
16 conversations?

17 A. Yes, I do.

18 Q. Now, today I want to kind of turn
19 that question around and ask you whether the Ministry
20 has done any work to identify site characteristics
21 which enable you to predict the ability of a site to
22 regenerate to commercial species in a predictable time
23 frame?

24 A. Not at a provincial level, apart
25 from -- if you recall the benchmark data for free to

1 grow standards by regions there was something of the
2 order of between 8 to 12 years that were given as a
3 range of time when, after an area had been treated
4 presumably and the stocking standards had been met, you
5 would look at that area in that range of time, 8 to 12
6 years, to see whether it would meet the the free to
7 grow criteria.

8 Q. All right. But does the Ministry have
9 any program at any level which allows you - whether or
10 not it is the direct focus of the program I am not so
11 concerned with - but that allows you to look at a site
12 and say: There are some trees growing there now, we
13 are going to cut them down, we are going to apply some
14 treatment and based on that we predict, based on site
15 characteristics of that area, that that site will
16 regenerate to this commercial species in this kind of a
17 time frame?

18 A. At a provincial level, no, but I
19 would suggest that at the field level, regional and
20 district, in relation to particular areas that a number
21 of the foresters have looked at that.

22 I do know that that has been looked at,
23 for example, in the northeastern region and other
24 regions, but not in a provincial scale, if that's what
25 your question relates to.

1 Q. Okay. Now, just in a general sense,
2 recognizing that this will vary, and it will vary from
3 site-to-site never mind from unit-to-unit and it will
4 vary from project-to-project within each unit, but can
5 you outline the kinds of factors that would be
6 important to consider when one was trying to make that
7 kind of prediction?

8 I assume, for instance, soils--

9 A. That's correct.

10 Q. --soil material would be very
11 important to that prediction?

12 A. And there is considerable amount of
13 information by regions relating to the characteristics
14 of the soil, and I believe I undertook to provide that
15 kind of information in a previous panel and have so
16 done for the northern region, northeastern region and
17 information about the northcentral and northwestern
18 regions.

19 Q. All right. And I gather that some of
20 that information will be covered in later panels, soil
21 survey information?

22 MR. FREIDIN: Panel 7.

23 MR. CAMPBELL: Q. Panel 7.

24 MR. ARMSON: A. Yes.

25 Q. That was my understanding, yes.

1 Okay. So if I want to deal in detail
2 with soil surveys and coverage and so on, I should do
3 all of that in Panel 7. Is that correct, Mr. Freidin?

4 MR. FREIDIN: No, ask Mr. Armson. You
5 can ask Mr. Armson any questions of a general nature as
6 to what those surveys sort of are, what the general
7 purpose of them are and how to use them.

8 It is just that I haven't produced all of
9 the soil surveys and all the manuals and the things
10 that go along with it. To date -- well, I have
11 produced it, but it is all in Panel No. 7.

12 MR. CAMPBELL: Are you coming back for
13 the regeneration panel?

14 MR. ARMSON: No, I don't anticipate that,
15 but if I might explain to Mr. Campbell. I undertook to
16 provide - I believe it was in response to a request
17 from Mr. Castrilli - a catalogue, enlisting of the
18 information, the land inventory information, soils
19 inventory information that was being used and
20 essentially the format in which that was being used.

21 And for the northern region, if I might,
22 there is in fact a document which has been presented
23 which lists for each of the management units in the
24 northern region a breakdown and it is a map, it is
25 actually on a geographic information system map, a

1 breakout of the areas segregated into three categories;
2 so-called Prime Land 1, 2, and 3 based on all existing
3 soils information from whatever source.

4 MR. CAMPBELL: Q. Okay.

5 MR. ARMSON: A. For the northeastern
6 region there is a comprehensive for the whole region
7 and, therefore, for each of the units within that
8 region, land form map and soils inventory which has
9 been used, and in fact in the northeastern region, the
10 regional staff there have related those areas, the
11 kinds of soils to growth - and you were asking about
12 the growth characteristics - for certain of the key
13 species there.

14 For the northwestern and northcentral
15 region, there is an ongoing procedure and
16 classification of the so-called forest eco-systems.

17 Q. All right.

18 MR. CAMPBELL: I take it it would be
19 satisfactory I could take a look at that -- I will take
20 a look at that material and if we felt it relevant, Mr.
21 Freidin, I am sure we could obtain a copy?

22 MR. FREIDIN: I believe that document is
23 one of the productions in Panel No. 7's witness
24 statement.

25 MR. CAMPBELL: Oh, I thought from the way

1 Mr. Armson talking it was something separate from that.
2 If it is what is already there, then obviously I --

3 MR. FREIDIN: What happened is Mr. Armson
4 gave me a copy very recently and said: Here is the
5 thing for Mr. Castrilli. I haven't distributed it
6 because the thing has already been given between the
7 time of the undertaking and very recently to everybody
8 as part of Panel 7's material.

9 MR. CAMPBELL: All right.

10 Q. So that when I look at Panel 7
11 evidence, what you are talking about is nothing that is
12 in addition to that, as I understand it?

13 MR. ARMSON: A. No.

14 Q. Oh, I see. All right.

15 Anyway, to come back to my question,
16 cycle back a bit. In terms of looking at factors that
17 are important in your ability to predict on a
18 particular site that if you harvest and treat you will
19 get a certain species and they will achieve your
20 objectives of sustained yield. Soils, you would agree,
21 is certainly an important factor?

22 A. That's right.

23 Q. And that would include such questions
24 as soil material?

25 A. Correct.

1 Q. Soil depth?

2 A. Yes.

3 Q. Soil moisture?

4 A. Yes.

5 Q. What other factors can you list for

6 me that, in a general sense, are important in the
7 forester's ability to make some kind of professional
8 judgment, which I call prediction, as to what that site
9 is going to come back in?

10 A. Well, the nature of the existing
11 forest is important too, but you are now saying in
12 addition to soil characteristics?

13 Q. Yes.

14 A. Well, those of topography, obviously
15 related to soils, but that is a second -- or a third
16 attribute.

17 Those are, if you like, the physical
18 attributes of a given situation. But then the extent
19 of the area, whether in fact its highly productive
20 soils but in small areas scattered is quite different
21 from having a relatively large extensive area of a
22 relatively uniform soil.

23 So the complexity or homogeneity of that
24 soil material or the physical attributes becomes an
25 important factor.

1 Q. And presumably the more homogeneous
2 it is and the wider spread it is the better your
3 ability to say: Yes, I can pretty much give you an
4 idea of what's going to happen here?

5 A. That's correct. Those I think are
6 the key attributes and the knowledge, particularly -
7 and I think I would stress this - the knowledge of the
8 species that are not only there, but the ones that you
9 are maybe interested in that may not be there.

10 And that's really the biological heart
11 of, if you like, of the decision making.

12 Q. What it is that that species that you
13 are targetting likes, if you will, in order to
14 establish itself successfully and reach free to grow
15 and develop on a sustained yield objective?

16 A. That's correct.

17 Q. Now, is it fair for me then to
18 conclude that your ability to predict -- the forester's
19 ability to predict the ability of a site to regenerate
20 to a commercial species in a predictable time frame
21 depends very much on a good knowledge of site
22 characteristics?

23 A. And the species.

24 Q. Yes. Taken -- yes, all right, and
25 the different species that he might want to aim for?

1 A. That's right.

2 Q. But if he looks at that, he says:

3 All right, I know I need for the industry any one of
4 these three species, I might target this but I can
5 accept this or this. Having looked at that as his
6 target, and in terms of his ability to predict whether
7 if he cuts and makes certain treatments he will
8 actually get those, that ability to predict, I suggest
9 to you - and I would ask you to agree - is directly
10 dependent on his knowledge of site characteristics?

11 A. That's right.

12 Q. All right. If I can just come back
13 to soils again. In Panel 3 - I don't think it is
14 necessary, Mr. Chairman, for the Board to turn this
15 up - but in Panel 3, at page 164 of your material, you
16 had this thing, an FRI tally sheet. Do you recall
17 that?

18 A. Yes, I believe it was Dr. Osborn that
19 discussed that.

20 Q. Oh, is that so. That's the tally
21 sheet and that's an actual tally sheet as opposed to a
22 photocopy of the page. (handed) There in that tally
23 sheet it has three categories under the heading: Soil?

24 A. Yes, correct.

25 Q. Material, depth and moisture. Could

1 you tell me how the information is gathered as to
2 material, depth and moisture when filling in that FRI
3 tally sheet?

4 A. I would defer to Dr. Osborn.

5 DR. OSBORN: A. Field observations by
6 the FRI crew and by field observation I mean literally
7 that, as they walk through to the layout of the ten
8 stations and in the course of going down the ten
9 stations, they will observe in the stand they are in
10 the nature of the soil material, they will literally
11 pick it up and feel it, rub it between their fingers to
12 assess the texture, they will look at the site
13 topography aspect to have an estimate of its moisture
14 because that obviously will vary.

15 It is no good picking it up at that
16 particular point in the middle of the afternoon and
17 saying it is damp or dry, so you have to look at that
18 in relation to the what site itself looks like. So
19 there is an interpretation as to the moisture content.

20 So those estimates are provided by the FRI
21 crew in the course of doing the ten stations that were
22 described.

23 Q.- Is there a pedologist included in the
24 FRI crew?

25 A. No, sir, there is not.

1 Q. What tests are, say, done for soil
2 material? What tests are done, are there sieve tests
3 done?

4 A. I just told you, sir, you feel it
5 with your fingers.

6 Q. But that is the sum and extent of the
7 test?

8 A. Yes, sir.

9 Q. And there is no augering for depth?

10 A. No, sir, there is not. This was
11 described in terms of how this process was done.

12 Q. I understand that, Dr. Osborn, I just
13 want to understand the tests that are done and the
14 evidence is, is what it is is they pick up a lump of
15 soil and they feel it between their fingers, and they
16 observe the topography around them to make some
17 estimate of the moisture conditions which will, of
18 course, vary with topography?

19 A. And they will do this in the course
20 of the ten stations and in the going to the stations as
21 they walk through the stand.

22 Q. All right. And apart from whether
23 there is pedologist there, in the FRI survey, is there
24 any formal soils training required to be represented on
25 that field observation FRI crew?

1 A. It is not part of the contract
2 specifications for FRI cruising contracts.

3 Q. All right. So if there is someone
4 there with any formal soils training, it is a matter of
5 good fortune as opposed to being required by contract
6 provisions?

7 A. It is incidental.

8 Q. And if we could turn to Exhibit 7,
9 Table 4.11.

10 MR. CAMPBELL: That is the Timber
11 Management Planning Manual, Mr. Chairman, and Table
12 4.11 can be found at page -- I guess this page isn't
13 numbered, it is the page following page 63 in my copy.

14 MR. FREIDIN: It is page 65, I think.

15 MR. CAMPBELL: Mine doesn't have a number
16 on it. In any event, it is Table 4.11.

17 Q. Now, over at the left-hand side in
18 this table, which is headed: Silvicultural Ground
19 Rules for Normal Operations, the second column is a
20 column headed: Site Description.

21 And, again, I don't know who the best
22 person is to deal with this, but I am going to try it
23 on you, Mr. Gordon, because you have been out there
24 running a unit for some time, and what I am interested
25 in is whether soils information is normally included in

1 that site description column?

2 MR. GORDON: A. I specifically haven't
3 filled out this table; however, based on my experience
4 of looking at management plans, when they divide the
5 forest up into forest units and then within the forest
6 unit divide it up into site types, they very often
7 differentiate by different soil types, and perhaps Mr.
8 Armson may have more information on that.

9 MR. ARMSON: A. Yes, I can answer that
10 very specifically. For example, in the northern region
11 as a result of a survey and classification system that
12 was set in place some -- a few years ago, there are now
13 categorized 13 so-called operating types which clearly
14 describe for those types and for the field foresters
15 the nature of the vegetation, in detail the nature of
16 the soils - and this I may say was done with
17 professional pedologists - and for the foresters,
18 therefore, operating there they are given that guide
19 and with their own professional knowledge -- and the
20 foresters have taken courses in forest soils and we
21 also have provided upgrading workshop courses relating
22 to forest soils for the management foresters -- and I
23 am not speaking here of those who do the forest
24 resources inventory survey, which is quite distinct.

25 Q. Yes, I understand.

1 A. There is, if you like, information
2 relating to the categorization of their areas and, in
3 addition for many of the units, though not all, there
4 are detailed soils maps prepared by professionals in
5 the field at the scale at which the forest information,
6 management information is also available.

7 So within the northern region there is a
8 considerable body. This is also true for the
9 northeastern region, as I mentioned. So that when you
10 look at the silvicultural ground rules for management
11 plans in those areas, it would be unusual not to see a
12 breakdown in terms of soils, soil texture, soil depth,
13 soil drainage.

14 Q. All right. So can I conclude from
15 that answer that, yes, soils information would be
16 included in that form?

17 A. That's correct.

18 Q. And not only that, but that in the
19 course of the timber management planning process that
20 it can normally be expected that the forester would
21 use -- there would be available to the public and to
22 other interested parties detailed soils information in
23 relation to the areas being considered for harvest?

24 A. There may not be detailed soils
25 information because the detailed surveys - and I am

1 speaking now at a scale of 1:15,840 which is the normal
2 scale of photography in forest resources inventory -
3 there are -- detailed soil surveys have not been
4 undertaken on all the areas, in fact, probably not on
5 the majority.

6 But for many of the areas there exist
7 land form information and a breakdown of the soil
8 materials. So the degree of detail or specificity of
9 the soils information will be variable. There are
10 units with detailed soil surveys, there are units with
11 only broad land form information available.

12 Q. All right. And we will get some
13 sense of that variability in Panel 7, as I understand
14 it?

15 A. Yes, I believe so.

16 Q. All right. But would you agree with
17 me at least this far: If there isn't detailed soils
18 information available in all of the involvement in this
19 timber management planning process, that at least to
20 the extent that soils information is available, that is
21 important information for all parties involved in the
22 timber management planning process at the unit level to
23 be aware of?

24 A. That is correct, and it is important
25 for many of the activities including harvesting.

1 Q. Yes. And would you also agree that
2 one's ability to predict the ability of the forest to
3 regenerate to a commercial tree species achieving the
4 objectives of sustained yield is dependent in large
5 measure on that soils information?

6 A. To a degree, yes.

7 Q. In large measure?

8 A. Significant measure, yes.

9 Q. Thank you. Mr. Armson, my last area
10 I think is aimed at you and really arises out of a
11 comment that you made the other day that kind of struck
12 me as interesting.

13 You made a comment that: Yes, there had
14 been mistakes made, no one is perfect, and we all
15 demonstrate that certainly more than adequately from
16 time to time - he says thinking back to units - and you
17 made a point that we do learn though from our mistakes.
18 Do you recall that?

19 A. Oh, I do, very well.

20 Q. And obviously I take no argument with
21 that view in general, but I would ask you this: Isn't
22 the ability to learn from your mistakes, on a
23 Ministry-wide basis, very closely dependent on the
24 Ministry's ability to take the lessons learned in one
25 area on a unit and apply them, apply the knowledge

1 gained as a result of those lessons in another area?

2 Isn't that what learning from our
3 mistakes is all about?

4 A. Yes, that is part of it, but I would
5 issue a caution there. This is a very large area and
6 we have made mistakes by in fact doing the very thing
7 you are suggesting, by having something which succeeds
8 in one area, and then saying: If it succeeds with this
9 species in the boreal forest in this area, it must
10 succeed elsewhere in the boreal. And we have found
11 where this may -- that it doesn't always work.

12 Q. But my simple point is: That is an
13 important thing to know, not just in that area, but
14 Ministry-wide?

15 A. Certainly.

16 Q. And would you agree with me that to
17 do that, to engender that learning process effectively
18 and efficiently, that information on the successes and
19 failures and the reasons perhaps more importantly the
20 reasons for those successes and failures, must be
21 available on a consistent basis across the province?

22 A. Yes.

23 Q. And would you agree that at the
24 present time much of that kind of information rests
25 only at the unit or district level?

1 A. Much, but not all. And if I may, in
2 answering that, say that the Ministry has in place
3 within its structure, within its organizational
4 structure, units and in this case - I am sorry, I
5 apologize for the word being used again - but the
6 so-called technology development units, a major one in
7 Timmins serving the northern region, one located in
8 Thunder Bay here serving both northwestern and
9 northcentral regions, and one in North Bay servicing
10 northeastern and Algonquin regions.

11 These are the the regions within the
12 undertaking that have been put in place specifically to
13 do both a transfer of existing knowledge and reasons
14 for why things worked and don't work within their
15 regions, but also to in fact facilitate the flow, if
16 you like, of the experience and information between
17 regions.

18 And if I could give you an example.
19 Later in September there will be a workshop in Fort
20 Frances on site presentation as it relates to soil
21 conditions and all these types of activities. That is
22 an example on-going of the kind of thing, and these are
23 the sorts of things that have been perhaps less
24 formally held in past years and I may say even in past
25 decades.

1 Q. All right. And some of those
2 difficulties, I take it you would agree, have been --
3 that difficulty in achieving it on a consistent
4 provincial-wide basis, have given rise to some of the
5 difficulties we have seen in this hearing of bringing
6 forward a consistent and comprehensive data set?

7 A. That's correct.

8 Q. All right. Now, would you agree
9 then - I think in effect you may have already answered
10 the question - but would you agree that looking to the
11 future that this Board should be concerned -- in
12 looking at the timber management planning process for
13 which approval is being requested, this Board should be
14 concerned about getting a process in place which makes
15 it much easier to communicate both your successes and
16 the lessons learned when problems arise, both
17 internally and to external agencies and the public?

18 A. That's correct, and I would suggest
19 that the technology development units and the one here
20 perhaps might be an -- there would be an opportunity
21 for the Board to find out how that system functions.

22 Q. All right. But that would be one
23 example. But, for instance, just in other areas like
24 consistent data gathering and so on, that is important
25 for both your internal communications learning --

1 I mean, I sort of prefer to put it learning from your
2 successes, take it so you can learn from your successes
3 and that you can better communicate those successes
4 both internally to other agencies and to the public?

5 A. No question, Mr. Campbell, you are
6 correct that a more consistent and continuous
7 documentation that would provide to both within the
8 Ministry and to the interested publics outside relevant
9 data, no question about it.

10 Q. All right. And you would agree with
11 me that the emphasis though has to be on relevant data,
12 there is no point in producing paper for paper sake?

13 A. That is correct, or numbers or
14 numbers sake.

15 Q. Absolutely.

16 MR. CAMPBELL: Thank you, Mr. Chairman,
17 those are my questions of this panel.

18 THE CHAIRMAN: Thank you, Mr. Campbell.

19 Mr. Freidin, at this point are we going
20 to deal with Mr. Cary's evidence before we get to
21 reply?

22 MR. FREIDIN: Yes.

23 THE CHAIRMAN: Mr. Cary?

24 MR. CARY: Mr. Chairman, may I have a
25 ten-minute break to set up? I think it would be much

1 more expedient that way.

2 THE CHAIRMAN: Very well. We will break
3 for ten minutes.

4 ---Recess taken at 10:15 a.m.

5 ---Upon resuming at 10:35 a.m.

6 THE CHAIRMAN: Thank you. Be seated.
7 You look lonely up there, Mr. Cary.

8 MR. CARY: Not for too long.

9 MR. FREIDIN: Could I have one moment,
10 please?

11 MR. CAMPBELL: You look very lonely up
12 there, Mr. Cary.

13 MR. FREIDIN: I understand that the
14 reason that he is looking lonely now is because he is
15 going to be asking the lawyers and the Board to join
16 him down there so they can follow the evidence that he
17 is going to give.

18 JOHN RANDOLPH CARY, Recalled

19 FURTHER DIRECT EXAMINATION BY MR. FREIDIN:

20 Q. Now, Mr. Cary, I understand that what
21 you are going to speak to this morning relates back to
22 some evidence you gave a number of days ago. You had
23 indicated that in the early 70s you had made a
24 statement about your predictions, actually the future
25 of some specific areas which had been harvested in the

1 Dryden area and you had a number of gloomy predictions
2 back in the early 70s about the fate of those
3 particular areas. Is that correct?

4 A. That's correct.

5 Q. And I understand that in your
6 evidence you indicated that you had visited these areas
7 or some of these areas recently, it was in May of this
8 year; is that correct?

9 A. That's correct.

10 Q. And as a result of that visit you
11 came to the conclusion that your gloomy predictions in
12 the early 70s have proven incorrect?

13 A. Yes.

14 Q. All right. The gloomy predictions
15 didn't sort of come to be?

16 A. That's correct.

17 Q. All right. And I understand that you
18 are going to in fact explain then why this visit led to
19 that conclusion by referring to a number of maps and
20 photographs which you have set up behind you?

21 A. That's correct.

22 THE CHAIRMAN: Mr. Freidin, just for my
23 quick reference, what was the exhibit number given to
24 your article?

25 MR. CARY: 158, Mr. Chairman, and it was

1 a paper that I presented at a joint conference of the
2 Canadian Institute of Forestry and the Ontario
3 Professional Foresters Association in 1976.

4 MR. FREIDIN: Now, Mr. Chairman, what I
5 would like to provide to the parties and to the Board
6 now are hard copies of most of - or is it all, Mr.
7 Cary?

8 MR. CARY: Hard copies of the overheads
9 that I will be using.

10 MR. FREIDIN: Q. All right. And there
11 is also copies of a number of maps or portions of maps?

12 A. Of four maps, forest resources
13 inventory maps.

14 Q. All right. That you have up behind
15 you and we will mark these.

16 MR. FREIDIN: Mr. Chairman, I am
17 suggesting that what we do is that as we go through the
18 presentation and Mr. Cary refers to a document, that
19 before he really goes into the details, that he
20 identify for the record what the document is and that
21 that document be marked as an exhibit, a separate
22 exhibit as we go along so that we can follow the
23 transcript.

24 But, as I have indicated, we have got
25 hard copies of some of these things. I would like to

1 hand them out now. I don't believe that they should be
2 marked as exhibits because of my remarks. (handed)

3 THE CHAIRMAN: Thank you.

4 MR. FREIDIN: Mr. Chairman, I am just
5 going to set some extra copies of the maps on this back
6 table. If somebody in the audience wants to sort of
7 follow along, they will be able to see the overheads,
8 but they won't be able to see these maps.

9 Q. Now, Mr. Cary, I am just going to ask
10 you then to -- we decided that the way you were going
11 to do this was in a sort of a presentation format.

12 I would ask you to sort of start off and
13 just keeping going until you are finished, and I
14 understand that at any particular time you think it is
15 convenient for the Board or any of the lawyers who wish
16 to come up so they can actually see these documents
17 that you are referring to, that you just go ahead and
18 ask them.

19 THE CHAIRMAN: You should also include
20 members of the public, Mr. Freidin, who might want to
21 look it as well.

22 MR. FREIDIN: Right.

23 MR. CARY: Mr. Chairman, before I start
24 showing you some overheads, I would just like to say
25 that on May the 11th of this year I returned to the

1 areas that I had managed in the period between '73 and
2 '76 and also had conducted some surveys on in that
3 period.

4 I was accompanied by a member of the
5 Dryden district staff, a Mr. Max Pletch, a Mr. Len
6 Suomo from Canadian Pacific Forest Products Limited and
7 Mr. Armson.

8 The observations from that visit and the
9 material that I have obtained from the district form
10 the basis of my presentation here today.

11 THE CHAIRMAN: Why did you go back in
12 May, was it to counter the article, the impressions
13 that were left in the article, or was it for some other
14 reason?

15 MR. CARY: It was to go back -- I was
16 aware of the article, I was aware of the possibility,
17 yes, but it was to go back and see what had happened,
18 what had actually happened to that area. And I was
19 concerned about those gloomy predictions which attained
20 some notoriety at the time and I wanted to go back and
21 have a look at what had actually happened on the area.

22 And so it was a professional concern. I
23 wanted to make sure that there was -- the evidence that
24 I had written way back in '76, I wanted to make sure
25 that -- and the predictions that I had remarked about,

1 whether they were accurate or inaccurate, and I was
2 professionally concerned about that.

3 MR. FREIDIN: Q. Just before you start,
4 Mr. Cary, are you referring to the overheads in the
5 order in which I have made them available?

6 A. I will be, yes.

7 MR. FREIDIN: Perhaps we could mark then
8 the document which has the overheads, Mr. Chairman, as
9 the next exhibit and we should all number the pages so
10 it will be easy to refer to during the evidence.

11 THE CHAIRMAN: All right. Exhibit 181
12 will be the hard copy of a series of overheads.

13 ---EXHIBIT NO. 181: Hard copy of a series of
14 overheads.

15 THE CHAIRMAN: Are you numbering the
16 title page?

17 MR. CARY: The...

18 THE CHAIRMAN: Is this page one?
19 (indicating)

20 MR. CARY: Yes, it is.

21 I would like to take you through a series
22 of overheads, and the first establishes the base for
23 the conclusions I have come to in 1988 and I will be
24 talking about three areas.

25 The first will be the forest resources

1 inventory on the management unit and, more
2 specifically, on the areas that I surveyed. We will be
3 comparing the old inventory against the new one, and I
4 will be getting into the details of that a little
5 later.

6 I will also be having a look at the
7 results of the not satisfactorily regenerated survey
8 that was conducted in 1987 on that management unit, and
9 I will be comparing aspects of the forest management
10 program that I was responsible for in 1975-76 to that
11 which is happening now. So it is those three areas
12 that I would like to cover.

13 Moving on to page 2. At page 2, in my
14 opinion, gives the bottom line of that article that I
15 wrote. It concluded that significant areas of the
16 Dryden paper management unit were going out of
17 production and that if Dryden is a representative area,
18 then large areas of the province, by extrapolation,
19 were going out of production as well.

20 And the foundations for that conclusion
21 were based on three areas: Regeneration assessment
22 surveys during 1973, '74 and '75, and those were
23 stocking surveys carried out three to six or seven
24 years after harvest.

25 The level of the forest management

1 activity in 1976, so what we were doing then. And I
2 had concerns about the delivery of that program and
3 those concerns resolved around, as they always do,
4 money, staffing concerns, and the technological
5 limitations that I was faced with then, and they
6 chiefly focused on mechanical site-preparation. I had
7 a problem treating areas. The conclusions that I made
8 then about the out of production proved to be
9 incorrect.

10 I would like now, Mr. Chairman, to draw
11 your attention to some geography, to locate ourselves
12 where we are. Exhibit No. 11 is the map of the
13 undertaking, the area of the undertaking, and Dryden
14 district is located in the northwestern region of the
15 Ministry of Natural Resources, the western part of the
16 area of the undertaking.

17 More specifically, the management unit
18 that I am talking of, the Dryden paper management unit,
19 now about to become the Wabigoon Forest FMA, is this
20 area outlined in green on a map which I will call
21 Exhibit No...

22 THE CHAIRMAN: 182.

23 MR. FREIDIN: Q. Perhaps you can just
24 identify that?

25 A. It is a map of Dryden district, scale

1 of 1:250,000 showing the Dryden paper management unit.

2 ---EXHIBIT NO. 182: Map of Dryden district at a scale
3 of 1:250,000 showing the Dryden
paper management unit.

4 MR. CARY: The management unit is
5 divided into three parts, most of it though lying south
6 of Dryden, west and east of Dryden. But there is an
7 area to the northeast and a small area of three
8 townships to the northwest of Dryden. So when I talk
9 about the management unit, I am talking about this
10 whole area that is outlined in green on the map of the
11 Dryden district, Exhibit No. 182.

12 I will then get more specific in terms of
13 geography when I talk about six base maps, and you will
14 be seeing on my next overhead I will be referring to
15 six base maps, and those six base maps are part of the
16 southern portion of the Dryden paper management unit
17 and this is shown on a map of Dryden, Ontario, also at
18 a scale of 1:250,000, and they are outlined in green
19 and they lie south of Dryden, and I will call this
20 Exhibit No. 183.

21 ---EXHIBIT NO. 183: Series of six base maps at a scale
22 of 1:250,000 of southern portion
of Dryden paper management unit.

23 MR. CARY: The area outlined in green, as
24 I have said, is an area encompassed...

25 THE CHAIRMAN: Was that part of what we

1 have got, that 183?

2 MR. CARY: No, it is not.

3 MR. FREIDIN: The document that you have,
4 Mr. Chairman, are the four copies of the forest
5 documents or maps which Mr. Cary's pointing out now.

6 THE CHAIRMAN: Thank you.

7 MR. CARY: I will be talking even more
8 specifically within that area. We will be having a
9 close look at the area south of Niven Bay within the
10 six base maps and also the area surrounding Kekekwa
11 Lake, K-e-k-e-k-w-a.

12 So within the area of the six base maps,
13 the four specific locations that I will be discussing a
14 little later in the presentation. So that gives you an
15 idea of the geography.

16 THE CHAIRMAN: What is the title of 183,
17 Mr. Cary?

18 MR. CARY: Map of Dryden district showing
19 six base maps.

20 THE CHAIRMAN: Thank you.

21 MR. CARY: Turning to page 3 of the
22 overheads, an elaboration on my first overhead. The
23 forest resources inventory that I will be discussing in
24 a moment, what we have done is to compare the 1965
25 inventory on the management unit and on the six base

1 maps with the 1985 forest resources inventory on the
2 management unit and on the base map. And that
3 comparison will be through the use of histograms or bar
4 charts, but I think you are familiar with them.

5 So I would like to show you that
6 comparison now, but before I do that I want to show you
7 another map. I am sorry, if I may, for a moment. This
8 map, which I am going to call Exhibit 184...

9 THE CHAIRMAN: Taking away my job. It's
10 okay.

11 ---EXHIBIT NO. 184: 1965 Forest Resources Inventory
12 map of Part 3 of Dryden Paper
Management Unit.

13 MR. CARY: Sorry.

14 THE CHAIRMAN: What are you going to call
15 it, Mr. Cary?

16 MR. CARY: I wasn't going to tell you.
17 This is the 1965 forest resources inventory map of Part
18 3 of the Dryden paper management unit which is the area
19 south of Dryden.

20 So the 1965 inventory Part 3 south of
21 Dryden. And on the map, there is an area outlined in
22 green which is the six base maps. This map is at a
23 scale of one inch to one mile and it shows the
24 inventory. It is a map of the inventory stand-by-stand
25 of the six base maps.

1 The next exhibit, Mr. Chairman, Exhibit
2 No...?

3 THE CHAIRMAN: 185.

4 MR. CARY: Is a map showing the same area
5 for the 1985 inventory, unfortunately on a different
6 scale, not one inch to one mile, which is 1:63,360 but
7 1:50,000 a slightly larger scale.

8 ---EXHIBIT NO. 185: 1985 Forest Resources Inventory
9 Map of Part 3 of Dryden Paper
 Management Unit.

10 MR. CARY: We are changing scales in the
11 province. And this map then, Exhibit 185, outlines the
12 inventory on the six base maps. So there is the data
13 base for the histograms that I will be showing you in a
14 moment.

15 I am going to come back to this slide. I
16 would like to move on to slide No. 4, overhead No. 4 on
17 page 4. I believe that Dr. Osborn has shown you
18 histograms of the forest resources inventory and this
19 is a histogram by age-class, from young to old, for all
20 working groups within the area of the six base maps.

21 THE CHAIRMAN: Mr. Cary, on page 3 you
22 refer to the 1965 and 1985 FRI, but on page 4 you have
23 got 1988 FRI.

24 Are there two different FRIs you are
25 looking at there?

1 MR. CARY: They are not different FRIs.
2 We put this presentation together quite hurriedly. If
3 I could explain that, the photography that I will be
4 showing you was taken in 1965, it is often referred to
5 as a 1965 inventory. The maps, though, were produced
6 in 1967. It takes some time before you get the map
7 from the photograph. So it is the same inventory.

8 THE CHAIRMAN: The same for '85?

9 MR. CARY: There is -- also we have used
10 '88 inventory - I haven't come to that - but there is
11 an '88 figure here and that is because we have made the
12 inventory correct up to 1988 by rolling in the results
13 of the NSR survey that were taken in 1987, so you have
14 the most up-to-date picture that we could possibly
15 provide you with. It is an '85 inventory updated
16 through an NSR survey in '87 to '88, but it is the same
17 inventory.

18 The histograms -- this particular overhead
19 shows the histograms for six base maps, as I have said,
20 by age-class all working groups for the production
21 forest area within those six base maps. I would like
22 to draw your attention to the B&S, barren and scattered
23 columns, and the 1-20 age-class columns.

24 The dark bars are the '67 inventory, the
25 hatched bars are the 1988 inventory. So we have over

1 here (indicating) a representation by per cent of area
2 of the production forest, by per cent of area of the
3 production forest the barren and scattered per cent.

4 In 1967 you will see from the graph that
5 it was about 22 per cent of the production forest
6 within the six base maps was barren and scattered. In
7 1988, you will see the per cent, about 3 per cent of
8 the production forest in 1988 was barren and scattered.

9 If, Mr. Chairman, my predictions had
10 proved to be correct, it is my opinion that this bar,
11 this hatch bar, the '88 FRI would have been very, very,
12 very much higher. I don't exactly know where, but it
13 would have been probably right up at the top end of the
14 scale here. Those areas are out of production. They
15 are B&S, they are not part of the production forest
16 base.

17 So if my predictions had been correct,
18 there would be an increase and not a decrease in the
19 barren and scattered in 1988. What we have got is a
20 significant decrease of the barren and scattered per
21 cent of production area, production forest...

22 MR. MARTEL: Can I ask a question. You
23 said it would have been increased. Why would it not
24 have remained at least?

25 MR. CARY: What remained constant?

1 MR. MARTEL: You said the barren and
2 scattered area, if your predictions had been correct,
3 would have increased beyond the 22 per cent.

4 Why is that?

5 MR. CARY: That was the conclusions of my
6 paper that there were a lot of areas going out of
7 production because of our inability to treat those
8 areas and my surveys -- the results of those stocking
9 surveys gave me grounds to believe that they wouldn't
10 get back into production. So the production would
11 be -- out of production area would be increasing rather
12 than remaining static; it would go up, it would
13 increase. So this is within the six base maps.

14 The six base maps with the area that I
15 surveyed, parts of that area where I surveyed, it is
16 also over the last -- the cutting started within the
17 area about 1965 and ended in about 1979 and some 20 odd
18 per cent of area was harvested. So an active set of
19 base maps have got a lot going on in them.

20 THE CHAIRMAN: But are all of these bars,
21 whether they are solid or hatched, averaged over the
22 six base map areas?

23 MR. CARY: They portray the exact
24 production forest within the six base maps.

25 THE CHAIRMAN: I guess what I am asking

1 is: Can you have the area depicted by one of the base
2 maps out of whack with one of these bars?

3 In other words, you could have a lot of
4 barren and scattered in one of them and you could have
5 a lot of return to the production forest in the other
6 five and that would give you an overall increase--

7 MR. CARY: That's correct.

8 THE CHAIRMAN: --in the production
9 forest, but that doesn't tell you exactly what is the
10 picture with each individual base map; is that right?

11 MR. CARY: That's correct.

12 THE CHAIRMAN: Okay.

13 MR. CARY: It is possible, of course, to
14 go down to each base map or each township.

15 THE CHAIRMAN: No, I am not suggesting
16 you have to, I just want to understand what this map
17 shows.

18 MR. CARY: Yes. What has happened in
19 1988 -- well, in '67 we had a large area of barren and
20 scattered and a smallish area, about 8 per cent in the
21 1-20 age-class, in 1967.

22 In 1988, we find ourselves with about the
23 same amount, 22 per cent in the 1-20 age-class in the
24 FRI, back into production. So there has obviously been
25 a moment between here (indicating) which is the bar,

1 the 1967 bar, barren and scattered, from here into here
2 (indicating) which is the 1-20 1988 FRI bar. So there
3 has been a movement between those two bars.

4 MRS. KOVEN: Is that normally in the FRI
5 data? We used to see barren and scattered accounting
6 for up to 20-year age-class, it is broken out by 1 and
7 21 normally in FRI?

8 MR. CARY: The barren and scattered may
9 be various ages, but in the FRI there is a
10 classification 1-20, 21-40, 41-60. That's the view for
11 the six base maps.

12 I would like now to turn the wider view
13 on the management unit. So I extrapolated to the area
14 I surveyed to the management unit. The same axis, all
15 age-classes, all working groups, with conifer and
16 hardwood. Again, I would like to draw your attention
17 to the barren and scattered bars and the 1-20.

18 Again, if my predictions had been -- my
19 gloomy predictions had come true, there would have been
20 a difference an increase of the barren and scattered
21 bar in 1988 and not a decrease as shown. The value of
22 the barren and scattered in 1967 is approximately 12
23 per cent and in 1988 about 6 per cent. The 1-20
24 age-class has increased in 1988 from about 5 per cent
25 in 1967 to some 18 per cent in 1988.

1 So that's the broader picture. We are
2 looking at the whole management unit now. A
3 different -- little bit of a different pattern because
4 of a much wider view.

5 THE CHAIRMAN: What accounts for the
6 difference in the 41-60 age-class group between the two
7 histograms, it is reverse?

8 MR. CARY: It is a reverse and I haven't
9 had time to talk to the management forester to find
10 out. I won't conjecture on what has happens. All
11 sorts of things could have happened; depletion through
12 fire, depletion through insects. I simply am not in a
13 position to comment on the later age-classes and I
14 prefer not to, Mr. Chairman.

15 If I can now go back to page 3 and look at
16 the second portion of the presentation on the forest
17 resources inventory and I would like to illustrate what
18 has happened over time to those harvested areas at
19 Niven Bay and Kekekwa Lake and I would like to show the
20 Board, by way of maps and aerial photographs, how
21 that's happened so that they can get some visual
22 impression of what's happened on specific areas within
23 those six base maps that I surveyed back in the early
24 70s.

25 I think what would be most helpful now,

1 Mr. Chairman, if we could move down and I can take you
2 through the photographs and maps illustrating what I
3 mean.

4 If I can just go over again. This is the
5 Exhibit No. 184 shows the '85 -- the '65 inventory and
6 it has shading on it, the two areas in Niven Bay and
7 Kekekwa Lake that I will be examining in the aerial
8 photographs.

9 Also, Mr. Chairman, you will note that on
10 this map the dark heavy black lines portray cut-over
11 activity. So you can see this has been an active --
12 there has been some active harvest going along within
13 this area. So that's Exhibit 184.

14 185 is the 1985 inventory, a slightly
15 different scale, a slightly larger scale so Saugeen Bay
16 will appear bigger on this one than it has on that one
17 there, slightly larger scale. This is the '85
18 inventory within those six base maps, with the same
19 areas indicated south of Niven Bay and Kekekwa Lake.

20 I would now like to refer to some aerial
21 photographs of the Niven Bay area and the first aerial
22 photograph I will label Exhibit No...?

23 THE CHAIRMAN: Let's call that Exhibit
24 186A. Sorry, what was that a photograph of?

25 MR. CARY: This is the photograph of the

1 area south of Niven Bay.

2 ---EXHIBIT NO. 186A: Aerial photograph of area south
3 of Niven Bay.

4 MR. FREIDIN: Q. And I understand it is
5 a portion of the FRI map which was prepared in 1967?

6 MR. CARY: A. That's correct. It is
7 also a portion of FRI map in 1985 as well and the FRI
8 maps are drawn from a much larger scale in Exhibit 184
9 and 185, difference of scale.

10 I would like to run through the
11 photographs first and perhaps, Mr. Chairman, if I label
12 them now...

13 THE CHAIRMAN: All right. Why don't you
14 just go down and allocate it a number from 186
15 alphabetically, but tell us what the title is of each
16 one.

17 MR. CARY: Exhibit No. 186B shows the
18 area south of Niven Bay immediately after harvest.

19 ---EXHIBIT NO. 186B: Aerial photograph of area south
20 of Niven Bay immediately after
harvest.

21 MR. CARY: Exhibit No. 186C shows the
22 area south of Niven Bay some 17 years -- I am sorry,
23 some 13 years after harvesting.

24 ---EXHIBIT NO. 186C: Aerial photograph of area south
25 of Niven Bay 13 years after
harvest.

1

2

MR. CARY: Mr. Chairman and Board members, I would like to draw your attention to Exhibit No. 186A, and counsel and members of the public.

5

THE CHAIRMAN: The assembled throngs.

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7

MR. CARY: Yes. And draw your attention to some of the characteristics of the photograph.

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This photograph taken in 1965 shows the forest, the natural -- the old forest and perhaps if you have a look at it closely you will see some brighter areas and that's a bit of rock showing through, so I can immediately tell that that's -- they are pretty shallow soiled area. There are some patterns within here that a trained eye can pick out and they are what the FRI photointerpreter uses to make his map.

17

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And you can see one here it is slightly darker than the rest. There is little swale here which is representing -- up there on top of that. but that shows the 65 old forest.

21

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Exhibit No. 186B was taken in May of '69, the year after the cut, and it shows the access road, the primary access road. It shows the tertiary extraction roads, and it shows very vividly - I would like you to have a look at it - the areas of landings.

1 So there is the access road across, going from -- they
2 came from the east and went westwards.

3 The landings are clearly shown, they are
4 kind of enlarged white areas. There is one there
5 (indicating) and you can see that the timber is
6 removed, compare the '65 to the '69, the forest has
7 been removed, it has been clear cut.

8 Some of the areas have been left for
9 whatever reason and these appear dark, but the cut-over
10 appears very light on the photograph. It reflects a
11 lot of light because it is clearer.

12 Exhibit No. 186C shows, in a visual sense,
13 the new forest that has come back by whatever means on
14 the area that was harvested in 1968. And I would like
15 to draw the Board's attention to the similarities
16 between the '65 photograph and the '82 photograph.

17 The roads and landings have disappeared,
18 revegetation has taken place, regeneration has taken
19 place. You can't see the landings and the tertiary
20 roads anymore, they are occupied.

21 THE CHAIRMAN: Mr. Cary, was there
22 extensive artificial regeneration in the area prior to
23 the '82 photo?

24 MR. CARY: There was not extensive
25 artificial regeneration in this area. At this time I

1 cannot tell you exactly what was done on each piece of
2 this area. There was some treatment, but the majority
3 of the area was not treated. It has regenerated
4 naturally unassisted by man.

5 So here we have a visual impression of the
6 new forest as compared to the old forest and this is
7 only 17-year-old forest. You can see more rock here
8 than you can there (indicating), but there are, I
9 think, startling similarities between the '65 and the
10 '82. The canopies haven't closed, the canopy hasn't
11 closed here so there is more rock exposed. You can see
12 more of the brighter whiter spots.

13 MR. FREIDIN: Q. And when you made that
14 comment you were referring to Exhibit 186C?

15 MR. CARY: A. That's correct. If we
16 come back and photograph that area in another ten years
17 when it is 25 years old, 27 years old I suggest it will
18 resemble very closely the 1965 photograph.

19 I would like now to move from the
20 photograph to the inventory.

21 THE CHAIRMAN: Perhaps we should give
22 that a different number.

23 MR. CARY: Yes.

24 THE CHAIRMAN: Exhibit No. 187.

25 Do you want different numbers for each of

1 these inventory maps?

2 MR. FREIDIN: Why don't we have Exhibit
3 187A and B, which I understand relate to the Niven Bay
4 and we'll have another one dealing with Kekekwa Lake.

5 THE CHAIRMAN: The first one will be
6 187A. And what do you call that, Mr. Cary?

7 MR. CARY: That is an FRI map at a scale
8 of 1:15,840 - four miles to the inch - of the area
9 south of Niven Bay.

10 ---EXHIBIT NO. 187A: 1965 FRI map at a scale of
11 1:15,840 of area south of Niven
Bay.

12 MR. FREIDIN: Are you having any problem,
13 Madame Court Reporter?

14 THE REPORTER: Only with the Chairman.

15 THE CHAIRMAN: Just with me.

16 Can you hear me now?

17 MR. CARY: The depiction of the FRI
18 stands in this area that we are talking about I would
19 like to refer you to them specifically, you have hard
20 copy of this, but if you look at stand No. 243 and I am
21 pointing to it on Exhibit 187A, you will see that this
22 stand is labeled in the jack pine working group, jack
23 pine 7; black spruce 2; poplar 1. It's 85 years old at
24 the time of the photograph.

25 I draw your attention to stand No. 237 to

1 the south of the area in question and it is a black
2 spruce working group. Stand No. 281 is a jack pine
3 working group mixed with 20 per cent poplar. Stand No.
4 280, again in the '65 inventory, labeled as jack pine
5 5; black spruce 3; poplar 2.

6 So that's the inventory is in 1965. I
7 would like now to refer you -- Mr. Chairman, I would
8 like to go to --

9 THE CHAIRMAN: Exhibit 187B.

10 ---EXHIBIT NO. 187B: 1985 FRI map at a scale of
11 1:15,840 of area south of Niven
Bay.

12 MR. CARY: Exhibit No. 187B depicts the
13 1985 inventory in the area south of Niven Bay and you
14 will see a very different array of stand types,
15 different working groups.

16 If we go back to the approximate area of
17 where we were in '65 on Exhibit 187A, we can see in the
18 first area stand No. 243 was a jack pine working group
19 and a rather complex array. The boundaries are
20 complex.

21 We now have an '85 label on Exhibit 187B.
22 The area has remained in the jack pine working group,
23 it is now 16 years old -- formally '85, it is now 16
24 years old. The site class is different too, it has now
25 been classified as site class 2, formally site class 3

1 and it is one large stand.

2 Now, that may change over time too. When
3 they come back in 20 years the composition may change
4 over time and the stand boundaries may change over
5 time, but at this point in time that is what the FRI
6 has labeled.

7 The area stand 237 on Exhibit 187A...

8 MR. FREIDIN: Q. If I could just for the
9 record, when you were referring to the similar area to
10 stand No. 243 on Exhibit 187A, you took us to Exhibit
11 187B you were talking about the stand which is marked
12 as stand No. 118?

13 MR. CARY: A. That's correct.

14 MR. FREIDIN: Thank you.

15 MR. CARY: What was formally stand No.
16 247 on Exhibit 187A in 1985, what was formally black
17 spruce stands in 1965 is now a jack pine stand in 1985.

18 Again, a complex set of stands in 1965
19 compared to the 1985 FRI where it is one larger stand.
20 The difference house for the forest, a different
21 arrangement.

22 The area that I talked about is stand No.
23 281 and 280 in Exhibit 187A. In 187B which is the '85
24 FRI is now a poplar stand, formally a jack pine stand.
25 Jack pine stands we now have at this point in time

1 poplar on that stand.

2 So that, Mr. Chairman, gives you an idea
3 of what has happened in the areas south of Niven Bay
4 specifically on one piece of geography.

5 MR. FREIDIN: Q. And on that last stand
6 that you referred to which you indicated a change from
7 jack pine to poplar, is there not standing still a jack
8 pine component of the stand shown on Exhibit 187B?

9 MR. CARY: A. That's correct. The jack
10 pine component has gone down from 70 per cent -- or 50
11 per cent down to 20 per cent.

12 MR. FREIDIN: Thank you.

13 MR. CARY: I would like to move on to the
14 area surrounding Kekekwa Lake.

15 THE CHAIRMAN: Do you want to start with
16 a new number for those photographs starting with 188A,
17 and then the next one will be 188B, C and D.

18 Mr. Cary, would you just explain what
19 each of those photographs depict.

20 MR. CARY: Yes, I will. Exhibit No. 188A
21 is an aerial photograph taken in 1965 in an area south
22 and east of Kekekwa Lake and it shows the old forest on
23 that area and a primary access road that will be used
24 to extract the timber from that area.

25 ---EXHIBIT NO. 188A: 1965 aerial photograph of area

1 south and east of Kekekwa Lake.

2 MR. CARY: Exhibit No. 188B taken in May,
3 '69 shows that same area shortly after harvest. It
4 shows not only primary extraction roads but tertiary
5 extraction roads. It shows areas of clear cut and
6 areas of landing.

7 ---EXHIBIT NO. 188B: May, 1969 aerial photograph of
8 area south and east of Kekekwa
Lake shortly after harvest.

9 MR. CARY: Exhibit No. 188C was taken in
10 1976, nine years after the cut-over and it shows the
11 new forest at that time that is regenerating on the
12 area. You may still be able to pick out some of the
13 landing and some of the tertiary exacting roads --
14 extraction roads, but it shows the new forest as it was
15 nine years after the cut.

16 ---EXHIBIT NO. 188C: 1976 aerial photograph of area
17 south and east of Kekekwa Lake
9 years after cut.

18 MR. CARY: Exhibit No. 188D is an '82 -
19 1982 aerial photograph of the same area from 15 years
20 after the cut-over. It shows the new forest growing on
21 that area.

22 ---EXHIBIT NO. 188D: 1982 aerial photograph of area
23 south and east of Kekekwa Lake
15 years after cut-over.

24 MR. CARY: I should like to draw your
25 attention again, Mr. Chairman, to the Exhibit 188 --

1 188A and Exhibit 188D. The signs of harvest have
2 almost disappeared and a new forest resembles quite
3 closely, visually the old forest.

4 So we have a set of four photographs
5 here, a set of three photographs in the Niven Bay area.

6 THE CHAIRMAN: Okay. Exhibit 189A and
7 the other one will be Exhibit 189B.

8 ---EXHIBIT NO. 189A: 1965 Forest Resources Inventory.

9 ---EXHIBIT NO. 189B: 1985 Forest Resources Inventory.

10 MR. CARY: I would like to take you
11 through the same sequence. Exhibit 189A is the 1965
12 Forest Resources Inventory. To save time, Mr.
13 Chairman, do you want me to go through the stand
14 comparisons again?

15 THE CHAIRMAN: Well, unless there is
16 something significant I do not think it is necessary.

17 MR. CARY: I don't think there is. So
18 exhibit 189A shows the 1965 FRI. Exhibit 189B -- I
19 meant '65, I am sorry. Exhibit 189B shows the 1985
20 Forest Resources Inventory.

21 You will notice again a different array
22 of stands, different labels. These areas are now young
23 and regenerated. Some have changed working groups,
24 some haven't; but they are in the FRI and we have a new
25 forest on this area.

1 Would any of the Board members like to
2 examine these photographs in any greater detail or ask
3 any questions about the FRI?

4 MR. MARTEL: Could I ask a question? If
5 some of that had moved from, let's say, black spruce or
6 jack pine to poplar and the industry in the specific
7 area couldn't use the poplar, what does that do for all
8 of our efforts to get the type of trees in place that
9 industry needs, because when we were in the Dryden area
10 we asked if poplar was being left behind because there
11 was no -- I guess the company in question didn't have
12 the mill facilities to handle poplar.

13 What would that do in terms of sustained
14 yield for industry?

15 MR. CARY: It means we have a different
16 new forest and if our objectives on that site were for
17 the management of black spruce or jack pine, we have
18 got regeneration success, but we haven't had
19 silvicultural success and we are not happy with that,
20 we are simply not happy.

21 At this point in time it is the wrong
22 species, but I should caution you again: Stands change
23 over time, composition changes and I would suggest that
24 if we have any -- I would suggest this stand here which
25 is 131 south of Niven Bay, I would suggest that in 20

1 years we are going to have spruce showing through
2 there, but I am conjecturing again.

3 But things do change over time. But we
4 are not particularly happy with that particular poplar
5 stand except the mill, of course, in Dryden is about to
6 utilize poplar, things changed. It is already taking
7 poplar from the Crown management unit and in 1989 they
8 will start to utilize poplar in the Dryden mill.

9 So that is what happens sometimes; from a
10 weed species to a desired species. It doesn't happen
11 overnight, but that is what is happening in Dryden now.

12 THE CHAIRMAN: Just a second, Mr. Cary.
13 Let us just get these exhibits of the hard copies
14 caught up with our numbering system here.

15 MR. CARY: Thank you, Mr. Chairman.

16 I would like to move on to discuss the
17 1987 NSR survey results and I will do that by
18 illustrating again the results on the six base maps as
19 compared to the results on the management unit.

20 This survey was conducted in 1987 and
21 because the area is to be -- if there is be a forest
22 management agreement on the area with the Canadian
23 Pacific Forest Products Limited. The agreement is
24 pending at this moment in time and we hope it to be
25 signed shortly. It will then be called the Wabigoon

1 Forest FMA.

2 Turning to page 6 of the handout, and
3 this illustrates graphically the NSR survey results,
4 results of the survey that was conducted. Before we go
5 into the pie charts I would like to point out that the
6 area surveyed was 31,427 hectares which is 6 per cent
7 of the management units' production forest. Those are
8 the areas they looked at.

9 I don't have it on the slide, but the
10 percentage of the production forest that was surveyed
11 on the 6 base maps was about 4 per cent and at this
12 point in time I can't get more accurate than about 4
13 per cent. So that 2,722 hectares is about 4 per cent
14 of the production forest on those 6 base maps.

15 We produced these results so that we
16 could update the FRI and we have put the results of
17 this survey, the NSR 1s - and I will explain - into the
18 histograms that you saw earlier in the presentation.

19 I can start with the pie chart that
20 describes the six base maps. The results of that
21 survey are as follows:

22 NSR 1, which we all had discussions over,
23 is free to grow and; that is, 37.6 per cent of the area
24 that was surveyed has been classified as NSR 1.

25 There is no NSR 2 classification. They

1 did not classify any of the area as NSR 2 in the area
2 of the 6 base maps; neither is there any NSR 3 on those
3 six base maps.

4 There is 1 per cent of NSR 4; there is a
5 large NSR 5 area, and if the Board wants me to go
6 through the classifications, I will. We have discussed
7 them before. 36 per cent of the area on the six base
8 maps is NSR 5.

9 Moving on to NSR 6, there has been a
10 subdivision there, 6A and 6B, together about 25 per
11 cent subject divided 5 per cent and 20.4 per cent.

12 The category 6A - and we have referred to
13 this as a holding category - is simply too young, too
14 recently depleted. 6B is more than five years old and
15 it has had a stocking assessment done on it, and it is
16 satisfactorily stocked but it doesn't have the height
17 for it to be declared NSR 1 or free to grow. It is
18 poised but not quite. So that is the picture on the
19 the six base maps.

20 MR. MARTEL: Why at this stage would you
21 not have anything in the 2 and 3?

22 MR. CARY: Simply because they didn't
23 find any, any that would fit that classification. Of
24 the 2,722 hectares surveyed there wasn't any of that
25 that needed tending in that particular area.

1 MR. MARTEL: The same with 3?

2 MR. CARY: The same with 3. These were
3 the results of the actual survey and their actual
4 divisions of those hectares.

5 If my predictions had been true we would
6 have had a very large area, a much larger area of those
7 site classes 4 and 5, 6. The picture on the management
8 unit is somewhat different. Again, I should stress
9 that only 6 per cent of the area was surveyed and of
10 that 6 per cent, the largest portion, as you can see,
11 was 6A. Nearly 65 per cent of the area was too young
12 for any classification to be made, too recently
13 depleted by harvest, by fire, by insects, simply too
14 young.

15 But 14.4 per cent of that area was
16 declared free to grow, NSR 1; there was no 2, but there
17 was 3 and 4 combined and we had to combine them for the
18 computer to register: 1.4 per cent and 11 per cent --
19 almost 11 per cent NSR 5.

20 NSR 6A that too young, 65 per cent and to
21 complete the circle, 6B with satisfactory stocking but
22 doesn't have the height: 8.9 per cent.

23 So that gives you an idea of the NSR
24 results when the survey was conducted in '87. Again,
25 if my predictions had been correct we would have had a

1 very different picture.

2 Going back to page 3 again, the last area
3 that I would like to discuss is the aspects of the
4 forest management program in 1976 compared to that of
5 1987.

6 Page 7 of the handout contains two
7 columns; the left-hand identifies aspects of the
8 program in 1975, and the right-hand column identifies
9 aspects of the program in 1987. I would like to just
10 go through them one at a time.

11 Back in the early 70s the equipment --
12 mechanical site-presentation equipment that I had at
13 the time was barrels barrels and chains and you may
14 have seen barrels and chains working, I am not sure. I
15 had no other equipment available to me.

16 Today on the unit disk trenches are used
17 Bracke scarifiers are used, there is a winter blading
18 program, and those three methods of site-preparation,
19 or equipment rather, are about 50 per cent now and
20 barrels and chains are the other 50 per cent.

21 So we have pieces of equipment now that
22 we didn't have then and that has given us the ability
23 to treat sites that were formally untreatable in 1975.
24 That hasn't happened overnight, it has happened in ten
25 years.

1 There was no tending activity on the
2 unit, we simply didn't do any. Now, there is a strong
3 tending program, pre-commercial thinning on the ground,
4 aerial spraying to control evasious vegetation,
5 competition rather, and limited ground spraying, and
6 active tending program.

7 Our regeneration consisted in 1975, for
8 the most part it was aerial seeding after site
9 preparation. There was some limited ground seeding.
10 The supplies of bare root stock were very limited and I
11 was lucky to get 200,000 trees a year.

12 Today we have aerial seeding, ground
13 seeding, also seeding with site preparation. The
14 Bracke scarifier, for example, can be equipped with a
15 device that drops seeds on the disturbed surface after
16 the machine has passed, so it is an attachment that
17 goes on the rear of the scarifying teeth. More
18 flexibility, treat a greater variety of sites with
19 ease.

20 The planting program has expanded some
21 four times and we have bare root stock and container
22 stock now, which as has been expressed before gives you
23 more flexibility in your planting program both in terms
24 of site and in terms of seeding.

25 The percentage of cut-over that was

1 treated in the early 70s wa 25 per cent. The
2 percentage of cut-over treated today is 65 per cent,
3 that is treated with a regeneration treatment. As I
4 mentioned to you, Mr. Martel, the mill is about to
5 utilize poplar. They are utilizing it from the Crown
6 management unit now and they intend to utilize it from
7 their own limits next year. The responsibility is
8 changing too. I indicated that it is about to become
9 an FMA and this is an important point, I think.

10 When I was there, harvest was the company
11 and we renewed. Now, there is an integration of those
12 options and Mr. Armson has spoken about that with the
13 company about to be the harvester and the renewer.

14 Mr. Chairman, that is the end of my
15 presentation.

16 THE CHAIRMAN: Thank you, Mr. Cary.

17 Mr. Freidin, I take it from the rest of
18 the parties that there will be some cross-examination
19 of Mr. Cary on his evidence this morning.

20 We will leave that until after lunch, I
21 think, to start with. Mr. Castrilli, do you have some
22 problems with that?

23 MR. CASTRILLI: Mr. Chairman, in light of
24 the extensive nature of the material, I would want an
25 opportunity to consult with my expert and have him

1 review what are Exhibits 181 -- actually really 181 to
2 189 and I can advise the Board some time next week if
3 and when I would like to have an opportunity to
4 re-cross-examine Mr. Cary.

5 THE CHAIRMAN: Is there anybody else that
6 is prepared to cross-examine after lunch?

7 MR. CAMPBELL: I think I would prefer to
8 just reserve my opportunity, Mr. Chairman. We want to
9 take a look at the stand maps that have been gone
10 through and it is very difficult to do just over lunch
11 and be ready to draw some conclusions.

12 THE CHAIRMAN: Gentlemen? Mr. Cassidy?

13 MR. CASSIDY: Well, we would like an
14 opportunity to take a closer look. But at this point I
15 don't anticipate lengthy cross-examination, but we
16 would like to have a review of the documents.

17 THE CHAIRMAN: Okay. After lunch, Mr.
18 Freidin, would you be prepared to re-examine the panel,
19 with the exception of any re-examination that may
20 result from the cross-examination of Mr. Cary, and then
21 we will hold down the cross-examination until probably
22 some time next week, just of Mr. Cary just on this
23 portion of his evidence?

24 MR. FREIDIN: All right. Perhaps I would
25 suggest that we break early for lunch so that we can

1 come back afterwards and do re-examination.

2 But perhaps before we do, I have got a
3 couple of questions for Mr. Cary which arise out of his
4 presentation. I am assuming this is like direct
5 evidence, evidence-in-chief, so...

6 THE CHAIRMAN: Okay.

7 MR. FREIDIN: Q. Mr. Cary, you gave some
8 evidence in relation to NSR survey results, 1987?

9 A. That's correct.

10 Q. Page 6.

11 A. That's correct.

12 Q. Of Exhibit 181?

13 A. That's correct.

14 Q. When you were going through the
15 photographs and then were taking the Board to the maps
16 which were marked 187A and B, and I believe 188A and
17 B--

18 A. That is correct.

19 Q. --that when you were comparing the
20 stands from the 1965 inventory to the 1985 inventory,
21 that the stand composition had changed in many cases?

22 A. Yes, in some cases.

23 Q. Right. And in other cases they
24 remained similar?

25 A. The label is similar, yes.

1 Q. But in each case you were able to
2 refer to a stand with a composition in 1965 and to a
3 another stand number in 1985 again which had a stand
4 number and a composition?

5 A. That's correct.

6 Q. Would you have a stand number and
7 stand composition on the 1985 photos if the stands in
8 1985 were not free to grow?

9 I guess what I am asking you: Were the
10 stands in the 1985 pictures that you identified on the
11 exhibits free to grow?

12 A. Yes, they were.

13 Q. Thank you.

14 You indicated that on the NSR surveys in
15 relation to the six base maps and the management units
16 that there was no area that was identified as an area
17 that was in need of a tending treatment and, therefore,
18 there was no areas identified as NSR 2 or 3.

19 Did I understand your evidence correctly?

20 A. That was the classification of the
21 NSR, showed no hectares in those categories.

22 Q. All right. Just leaving aside what
23 may or may not have been required in the stands that
24 you referred to or in the management unit that you
25 referred to, if a forest manager goes out to the forest

1 and finds a stand which is 25 years old, for instance,
2 and perhaps is not particularly happy with exactly what
3 they see on that area, although the area is free to
4 grow, is there anything that can be done
5 silviculturally at that age of the stand to affect how
6 the stand may change or develop over time?

7 A. Yes, there is.

8 Q. What?

9 A. We could tend it using a
10 pre-commercial tending treatment. We have even sprayed
11 stands like that. Again, it depends on the
12 competition, it depends on what species your objective
13 is in mind, it depends on the management objective.

14 Q. And I understand that all of the
15 options that would be available to a forest manager
16 based on different situations will be the subject of
17 some detailed evidence in the panel which deals with
18 maintenance?

19 A. Absolutely, yes.

20 MR. FREIDIN: Those are the questions I
21 wish to ask.

22 THE CHAIRMAN: Okay, Mr. Freidin. When
23 we return from lunch you will continue with your
24 re-examination. How long do you expect to be?

25 MR. FREIDIN: I never watched my watch

1 the last time, but I understand I am usually an hour
2 and half. If my information is correct, I will be at
3 least an hour and a half today.

4 THE CHAIRMAN: And are you going to be in
5 a position to start the next panel?

6 MR. FREIDIN: The next panel is ready to
7 start at two o'clock. So I assume that the panel could
8 start later in the day and I think we will just have to
9 see how late in the day we go to determine whether in
10 fact it would be a good idea to start them.

11 THE CHAIRMAN: If you did start later
12 today, would you expect to finish by tomorrow?

13 MR. FREIDIN: I don't believe so. And
14 the reason I am being a little vague is that I am not
15 going to be leading the evidence on this panel; Ms.
16 Blastorah is going to be doing that.

17 But I don't believe that I could assure
18 the Board that we will finish in a day. I think we are
19 looking at a day to a day and a half. I'm advised by
20 Mr. Douglas that he believes if we can get an hour to
21 an hour and a half in today in lead that we should be
22 able to finish the direct evidence tomorrow.

23 I think what he's telling me is don't
24 take too long in re-examination.

25 THE CHAIRMAN: Obviously Ms. Blastorah is

1 going to be faster than you are.

2 MR. FREIDIN: I will tell her you said
3 that.

4 THE CHAIRMAN: All right. We will break
5 until 1:30. Thank you.

6 ---Luncheon recess at 12:00 p.m.

7 ---Upon resuming at 2:00 p.m.

8 THE CHAIRMAN: Thank you, ladies and
9 gentlemen. Normally we apologize for the delay, but
10 you all know the reason for the delay.

11 MR. CAMPBELL: We have had a confession,
12 have we?

13 THE CHAIRMAN: Mr. Freidin?

14 MR. FREIDIN: Yes.

15 --- (Panel resumes)

16 RE-DIRECT EXAMINATION BY MR. FREIDIN:

17 Q. My first couple of questions are to
18 Mr. Cary and to Mr. Armson. I am sure you will both
19 recall being questioned about the Ontario Charter which
20 contained a statement about replacing each tree
21 harvested with two planted trees.

22 Do you recall that question in relation
23 to that subject matter, Mr. Armson?

24 MR. ARMSON: A. Yes, I do.

25 Q. Mr. Cary, do you recall that?

1 MR. CARY: A. Yes, I do.

2 THE CHAIRMAN: We knew that this hearing
3 would eventually degenerate into a charter issue, Mr.
4 Freidin.

5 MR. FREIDIN: Q. My first question is to
6 you, Mr. Cary. Evidence has also been given by this
7 panel that every acre harvested has not received a
8 regeneration treatment; do you agree with that?

9 MR. CARY: A. Yes.

10 Q. And I understand your evidence that
11 planting is a regeneration treatment?

12 A. That's correct.

13 Q. You were asked by Mr. Martel in this
14 discussion about the Ontario Charter whether Ontario
15 was planting two trees for each one harvested and your
16 answer to that question was yes.

17 A. That's correct.

18 Q. Can explain what you meant; how you
19 could say yes when in fact the evidence indicates that
20 every acre harvested has not received a regeneration
21 treatment?

22 A. Yes, I will. I don't think the two
23 answers are inconsistent. As I think I told Mr. Martel
24 in response to a question of his that perhaps that was
25 impossible, I don't believe it -- it certainly isn't

1 impossible. I also said that we don't count each tree
2 that is cut, I remember saying that.

3 The basis for my statement that we were
4 planting two trees for one was based on: We have an
5 idea of how much we harvest, we have an idea of how
6 much volume comes off that harvested area, we have an
7 idea of what the size of an individual tree is and,
8 again, approximate calculations - because we don't
9 count every tree that's harvested - approximate
10 calculations give us a range of numbers of trees
11 harvested, and somewhere in the order of 65- to
12 75-million trees would be harvested each year.

13 I think that that's a reasonable range.
14 If that's a reasonable range, over the last three or
15 four years we have planted anywhere from 130- to
16 163-million trees. I think the 163 is the '87
17 figure -- the '88 figure.

18 So if you look at it like that,
19 admittedly approximate, that's the sort of number of
20 trees that are harvested and, again, our
21 pre-planting -- the numbers of trees we plant has
22 varied, is continuing to increase, but over the last
23 three or four years from 140- to 160-million.

24 Q. Thank you. Mr. Armson, when you are
25 considering the regeneration of a new forest after

1 harvest, does it matter whether two trees are planted
2 for every one harvested?

3 MR. ARMSON: A. No, I believe it is
4 irrelevant and perhaps just to explain that. We are
5 harvesting the natural forest, we are -- when we are
6 planting, we are planting trees in numbers, density,
7 numbers per unit hectare at an early stage in life that
8 will be quite dissimilar, that is the planted ones,
9 from those in the natural forest.

10 I wonder, Mr. Chairman, if I could use a
11 flip chart in the sense that I may be able to clarify
12 it a little better here.

13 The reason for wanting to do that is
14 because I believe that some of the information that I
15 presented in the SOARS data has some relevance here.
16 And this is, I think, a very basic way in which in
17 forestry we would look at populations towards achieving
18 a particular objective.

19 If we look at the numbers, the density
20 numbers per hectare of trees as indicated on the "y"
21 side, on the vertical axis and we are speaking of the
22 boreal forest, the ones we have been talking about:
23 black spruce, jack pine, and so on, and we look at the
24 relationship between numbers and age and Dr. Osborn
25 referred to the tables, and I believe the yield tables

1 are in an exhibit, I can't recall the numbers, if you
2 look at those tables there is some variation for black
3 spruce, jack pine, but they are somewhere in the order
4 of magnitude of the 5 to 10 thousand per hectare, if I
5 recall.

6 And if you then move down that natural
7 yield table -- or the yield table for that natural
8 forest, you will find that - if I take a starting point
9 here, then you will find that curve comes down and in
10 age 100 -- 80 or 100, it will vary, but we are usually,
11 in terms of total numbers, we are dealing with
12 something of the order of maybe 2, 000, maybe 3,000;
13 that's all the stems, some of which will be
14 merchantable and some will not.

15 I was interested, I was doing a little
16 calculation. If you accept it was 65 to some odd
17 million --

18 MR. CARY: A. 65 to 75.

19 MR. ARMSON: A. 75-million per 200,000
20 hectares of cut-over, if my arithmetic was going, that
21 is somewhere around 300 trees per hectare, is it not?
22 I think it is something like that.

23 So that from those natural stands -- the
24 point I am getting at is from those natural stands, if
25 that is the total population, what we are harvesting,

1 in natural fact, what we are cutting down in here
2 (indicating) from those stands is a much smaller number
3 obviously that we -- some standards for
4 merchantability.

5 Now, what is happening when we plant
6 trees, we plant trees, these are 1-, 2-, 3-, 4-, 5,000
7 stems per hectare, we are planting - if we have a
8 relatively high density and if you look in the SOARS
9 data, you will find that most of those densities were
10 somewhere in this zone. So I will just put a circle in
11 there to represent it, it may be 1,000, if it may be --
12 if it were 2,500 it would give you some balance, it
13 would be 1,000 stems per acre.

14 So we are actually planting on the area
15 that has been depleted to start with, at age 1-5,
16 something that is in fact a very small proportion
17 amount of the total density that that normal forest
18 had.

19 And Mrs. Koven you said something, I
20 think it was very perceptive. You said when I was
21 talking about the SOARS data: But isn't it true
22 therefore that nature will put trees on there one way
23 or another, these were the non-desirable species. I
24 think that was -- words to that effect. And in fact,
25 that is what happens.

1 If we plant that number, what we are
2 expecting or anticipating is that that will produce a
3 number like that. The problem is - and this is where
4 the two for one comes into it - you put two trees on
5 here for every one you cut here. (indicating) The
6 problem is that in the natural setting nature, unless
7 we tend to move these numbers up, the reason the
8 natural forest comes down - the reason this one we
9 anticipate - is for the very fact that competition, as
10 the trees grow in size - in Panel 9 we will address
11 this, if I may, Mr. Chairman, in some detail - that
12 what you are getting is increased competition and,
13 therefore, a reduction in the numbers.

14 When we start with a very low number,
15 what has been happening is that unless we control the
16 ingrowth from other species or maybe some of the other
17 species, that will always tend to move up in here. We
18 are talking about the productivity of the land. It
19 always tends to move up unless we either control it in
20 some way to maintain that life curve down here.
21 (indicating)

22 And what you saw in the SOARS data from
23 the early artificial regeneration was that this forest
24 here driving -- with up was poplar, birch and other --
25 black spruce, was driving it up to more -- approximate

1 that kind of a curve.

2 Now, if we are dealing with black spruce
3 and jack pine, we have - and you will see again - we
4 had a much higher percentage of what we would think of
5 as success in terms of maintaining that population.
6 When we went to white spruce, you will notice that we
7 started with maybe something less than that, normally
8 around 1,000 per hectare, 1,500 and in fact at years
9 30, I think that was about -- 35-40 or 30-35, we were
10 down here with a matter of maybe 100, maybe 200, but
11 the concern was whether that curve would in fact ever
12 make it out here, keeping in mind that the white spruce
13 doesn't occur in natural stands normally in a
14 relatively pure situation and the areas in which it is
15 planted, we know there is going to be -- in fact, there
16 often is high residual poplar and birch.

17 So in looking at the two for one - now
18 coming back to that - what does it really mean.
19 Planting two here doesn't have any meaning there if you
20 take into account what the natural dynamics are going
21 on in here.

22 THE CHAIRMAN: Do you want that in, Mr.
23 Freidin?

24 MR. FREIDIN: Yes, please.

25 THE CHAIRMAN: Exhibit 190.

1 MR. ARMSON: I just titled it Life Curve
2 For Trees.

3 ---EXHIBIT NO. 190: Hand-drawn diagram entitled: Life
4 Curve For Trees.

5 MR. MARTEL: Can I ask a question then,
6 Mr. Armson? Why would MNR lawyers -- MNR ministers
7 previous say that it was impossible to plant two trees
8 for one?

9 MR. ARMSON: I am not sure I recall them
10 saying it was impossible. Obviously, to get into the
11 finer points of seeding and so on, I would look upon a
12 statement such as planting two trees for one or three
13 trees for one - other jurisdictions have talked about
14 three trees for one many centuries ago as a matter of
15 fact - I would look upon it as rather a symbolic
16 statement rather than a factual one because it all
17 depends on what kind of a forest you want to create.

18 MR. FREIDIN: Q. Now, Mr. Armson, you
19 were referred to Document No. 9 which is found at
20 page -- Document 9 of the witness statement and I would
21 like you to turn to page 83 of that.

22 MR. ARMSON: A. Yes, I have that page.

23 Q. Mr. Castrilli referred you to that
24 page and re: the area which is identified as
25 non-treatable, you testified that that is an estimation

1 by field foresters that an area couldn't be treated
2 because the area was either too rocky, too wet or too
3 steep.

4 In the situation that I just described,
5 are you able to say whether such an area after harvest
6 would regenerate?

7 A. They would normally regenerate.

8 Q. Are you able to advise to what it
9 would regenerate in comparison to what the stand looked
10 like before harvest?

11 A. They might -- those areas might or
12 might not regenerate to the species that were there.

13 I think the experience would show that on
14 the rockier ones, the one of very shallow soils,
15 usually with jack pine and some mixture of black
16 spruce, they would tend to convert to those same
17 species because in fact competing species, such as
18 poplar and birch don't grow there very well. Birch
19 does on what we call rocky talus slopes, but that is
20 somewhat of an exception.

21 But in the areas of wetter soil,
22 depending on the degree of wetness, other species such
23 as poplar or birch, but particularly poplar, might come
24 in. So it could be the species that was there or it
25 could be another tree commercial species.

1 Q. Thank you. Could the panel refer to
2 their copy of Exhibit 157 which is the proposed policy
3 for controlling...

4 Actually you may not have to refer to it.
5 I want to read a statement on page 1 of that report in
6 the second paragraph where it states that:

7 "The rapid increase in the size of modern
8 forest industries and the trend to
9 complete mechanization and the
10 utilization of all species has resulted
11 in continuous clear cut areas. In
12 northern Ontario ranging, in extreme
13 cases, up to 50,000 acres.

14 This is not an acceptable application of
15 the clear cut and silvicultural system."

16 Now, Mr. Armson, when you gave evidence
17 you said that you had never seen a clear cut of that
18 size. I would like to ask you, Mr. Cary, have you ever
19 seen a clear cut of that size?

20 MR. CARY: A. No, I have not.

21 Q. Mr. Gordon, in your experience, are
22 you able to advise whether you have seen a clear cut of
23 that size?

24 MR. GORDON: A. No, I have not.

25 Q. Dr. Osborn, in your experience, are

1 you able to advise whether you have seen a clear cut of
2 that size?

3 DR. OSBORNE: A. No, nor have I seen in
4 the FRI any data indicating a size -- a barren and
5 scattered of that size.

6 Q. Thank you.

7 THE CHAIRMAN: Panel, what was the size
8 of the blowdown that we flew over roughly, in
9 comparison to 50,000 acres; would anyone know?

10 MR. FREIDIN: My present information is
11 that that blowdown was larger than 50,000 acres. We
12 will obtain that information and provide it to the
13 Board. I have to confirm that.

14 THE CHAIRMAN: And just one other
15 question. Is it your experience that in recent years
16 there have been forest fires which have exceeded 50,000
17 acres?

18 MR. ARMSON: Yes, Mr. Chairman, and I
19 believe in Panel 2 one of the documents or a set of
20 documents that is in that evidence-in-chief were
21 imagery, LANDSAT imagery for, in fact, a fire of the
22 order of 300,000 acres.

23 THE CHAIRMAN: Thank you.

24 MR. FREIDIN: Q. Mr. Armson, you were
25 asked a series of questions about Exhibit 157 and you

1 indicated that you had been requested by Mr. Robinson,
2 one of the authors of that document, for your
3 professional judgment on the proposed policy.

4 And in your evidence you indicated that
5 you recall taking that report home and speaking to Mr.
6 Robinson after the weekend. And if I just read to you
7 what you said in that regard, and I am referring to the
8 transcript of August the 15th, Volume XXXIII at page
9 5519. (It goes down very hard, Mr. Chairman) You say:

10 "I took it away with me and I can be very
11 clear. I read it over the weekend and I
12 handed it back to Mr. Robinson on Monday
13 and he said: What did I think of it?
14 And I said: I had a very low opinion of
15 it and that the rationale and the
16 statement, particularly the table
17 concerning constraints in this document,
18 wouldn't hold water under any scientific
19 or full professional examination."

20 Could you advise me, Mr. Armson, what did
21 you mean by "rationale" in that statement - I can
22 repeat it if it is necessary - and why wouldn't it hold
23 water under any scientific or full professional
24 examination in your view?

25 A. Well, if I could refer the Board in

1 that document to Table 1, I specifically referred to
2 that in my statement earlier.

3 Q. Perhaps we could, that's Exhibit 157?

4 A. That's correct.

5 Q. Table 1, which is found on page 2.

6 A. The table is titled Constraints to
7 the Size of Clear Cuts, and under the heading -- and
8 then there are two columns one titled Soils and the
9 other, to the right of it, titled Constraint.

10 And then under the column Soils there are
11 four categories and one is -- the first one says:

12 "Soils under 12 inches (30
13 centimetres) deep over 40 per cent or
14 more of a forest stand.

15 The constraint then is clear cut in
16 strips or groups, widths of strips to be
17 two to four chains (40 to 80 metres);
18 groups, three to ten acres..."

19 That is one to four hectares in area.

20 The statement then reads:

21 "The more fragile the site, the narrower
22 the strip or smaller the group."

23 And I said to Mr. Robinson at the time:
24 Why did you single out, if you like, a level or a
25 standard of shallow soils or soils of 12 inches? For

1 example, what is magic about 12 inches; is it 12 inches
2 of a clay loam, is it 12 inches of a sand, is it 12
3 inches of gravel, and what is magic? And I didn't get
4 any rationale for the depth.

5 I then said: The constraint is to clear
6 cut and with limitations in both width, there is
7 nothing about species, there is nothing in fact about
8 why you would do it.

9 There are some general statements in the
10 document about concerns for regeneration, concerns for
11 erosion and a lot of other things but, in fact, if you
12 were going to justify that kind of a constraint on the
13 basis of a 12-inch depth of material, whatever it might
14 be, it raises more questions, in fact, it doesn't
15 answer any. And I said: From a professional
16 standpoint it, therefore, wouldn't hold water.

17 If I may go down the list, he has -- in
18 fact, the second item under Soils:

19 "Soils subject to blowing..."

20 And then he has a footnote to that
21 defining the particle size and the definition of
22 particle size is quite correct; that is, the range of
23 particle size that can be windblown and the constraint
24 is clear cut in strips not over three chains wide.

25 And I said to him: How can the wind blow

1 soils about, even of the appropriate particle size, if
2 there is a virtually complete forest floor, surface
3 organic layer on the top, and the answer was: Well, it
4 can't.

5 And I said: Well, why is the criterion
6 here soil subject to blowing, unless you define the
7 conditions under which they would be subject to
8 blowing.

9 The third item was organic --

10 THE CHAIRMAN: Excuse me, Mr. Armson.

11 MR. ARMSON: Yes.

12 THE CHAIRMAN: I don't think I followed
13 that last rationale that you just put forward about a
14 continuous forest floor.

15 MR. ARMSON: Oh. Well, the mineral
16 materials are the ones that blow.

17 THE CHAIRMAN: Right.

18 MR. ARMSON: So the definition is: If
19 you have a soil mineral material in the area that you
20 are harvesting and it is within the limits of diameter,
21 then it could be blown, but it can't be blown unless
22 the wind can get at it.

23 And in fact - and this was from a great
24 deal of considerable personal experience on one of our
25 Crown management units - the one you have heard about,

1 the Plonski forest - in which the greatest part of the
2 jack pine working group which constitutes, I think at
3 least a third of the total production forest area
4 there, those soils are made up of dune sands.

5 So that on that basis you would, in fact,
6 expect that whole area on this Crown unit to -- if the
7 constraint had been in place, to have been clear cut in
8 strips not over three chains wide.

9 In actual fact the foresters who have
10 been managing that area since the late 1950s, but
11 particularly the 1960s, have been clear cutting and the
12 size of the individual clear cuts have been of the
13 order of 100, 200 and even up to 4- and 500 acres, so
14 considerably -- way over this.

15 The areas have been site prepared and
16 then planted or seeded and, in fact, there has been no
17 wind blowing. So I said: Your own areas and your own
18 activities give the lie to that particular set of
19 constraints.

20 Then we went to organic soils --

21 MR. FREIDIN: Q. If I just might, Mr.
22 Armson, just arising out of that. Are there techniques
23 which can be used in actually carrying out timber
24 management activities to avoid disturbance of the forest
25 floor?

1 MR. ARMSON: A. Yes, there are, or to
2 avoid the kind of disturbance which would expose it to
3 this type of an action, such as wind erosion in this
4 particular case.

5 Q. And can you advise whether those
6 techniques are practised in Ontario?

7 A. Yes.

8 Q. Yes?

9 A. Yes.

10 Q. Yes, they are?

11 A. Yes, they are.

12 Q. Thank you. You can continue with the
13 third category.

14 A. Then the third category was organic
15 soils, and in parenthesis it says: (predominantly
16 black spruce). The constant is to clear cut in strips
17 not over five chains wide or 100 metres wide.

18 It is, again, known and in fact documented
19 in the forest eco-system classification for the clay
20 belt that organic soils in which black spruce grows are
21 of -- have a variety of characteristics in terms of
22 depth and, more particularly, depth as related to the
23 water table and not only its level within the soil but
24 the movement of the water table.

25 And, again, Mr. Chairman, I will be

1 discussing some of this in Panel 9. And in fact on
2 many of those areas there is no rationale to restrict
3 the cutting - this is not to say there wouldn't be on
4 some - but on many of those areas you would not have
5 any rationale from either a professional forest
6 management standpoint or in terms of the effect
7 hydrologically on the water table to in fact restrict
8 your clear cutting to a width of the order of five
9 chains. So that was the third one.

10 The deep mineral soils -- if I may, the
11 final one left a lot and didn't say anymore, it said
12 deep mineral soils. In fact, there are deep mineral
13 materials, till and morainic deposits where the soil
14 profile, that which is rooted by the forest, is in fact
15 very shallow.

16 And I would have some considerable
17 reservation about certain kinds of activities on those
18 so-called deep mineral materials if I, in fact, had a
19 shallow soil and a shallow rooting far more than I
20 would on perhaps 12 inches of soil over bedrock.

21 So in going through those categories, I
22 explained to Mr. Robinson why and I looked for answers
23 and I am afraid he didn't give them to me that were
24 satisfactory.

25 That may be a lengthy reply, Mr. Freidin,

1 but that is the basis for my statement.

2 Q. Thank you. I would like to refer you
3 to the transcript, the same transcript I just referred
4 you to, August the 15th, '88 page 5528, and I am going
5 to quote to you from line 21 on that page to page 5529
6 line 12.

7 Mr. Castrilli stated to you or said to
8 you:

9 "Mr. Armson, on June the 16th of this
10 year, in Volume XVI..."

11 He was referring to the volume of the
12 transcript:

13 "...I was questioning you on the issue of
14 whether by 1975 it was evident that
15 industry cutting practices were causing
16 problems for the success of MNR's
17 regeneration efforts. Do you recall
18 those questions?"

19 MR. ARMSON: A. Yes.

20 Q. You said:

21 "I do."

22 Mr. Castrilli continued:

23 "And do you recall that your answer was
24 that regeneration problems were not due
25 to uncontrolled clear cutting, but to

1 other factors such as lack of roads?

2 A. That was part -- I believe,
3 that was one of the reasons.

4 Q. In light of the report on
5 clear cutting, which is now Exhibit 157,
6 do you wish to change your earlier
7 answer?"

8 And your answer was:

9 "No, I am even more confirmed in it."

10 Is what your answer was. And I want to
11 know why are you now even more confirmed in that view
12 than you were earlier?

13 A. I am confirmed in that view because
14 following that, and again since 1980 the when industry
15 has become fully -- at least those who had entered into
16 forest management agreements, have taken on full
17 responsibility for the planning and integration of
18 harvesting and regeneration, it has become to me
19 abundantly clear in the exercising of that
20 responsibility that the actual size of the clear cut is
21 not a relevant matter, that if the planning under
22 professional knowledge and expertise takes into account
23 the existing forest conditions, including what is known
24 about the soils, it is quite proper to in fact have
25 clear cuts that may be very large in size but their

1 form, their configuration, their relationship to the
2 existing uncut forest become far more relevant factors
3 than the sheer size.

4 There has been -- and, if I may, there
5 has been often a desire on the part of many - and
6 perhaps even sometimes some foresters - to put an
7 absolute limit on area.

8 The question I always have asked is:
9 What shape do you want? If you want an absolute limit
10 of 300 acres, do you want a long stringy 300 acres, or
11 do you want one that is oblong or sinuous, and I have
12 in fact in my professional designed clear cuts for
13 harvesting, not in this province but in the Atlantic
14 province, which were of the order of 700 acres in which
15 in fact there was, in its design, it was laid out to
16 not only satisfy what I would consider now
17 environmental concerns, but those of aspects and
18 viewing by people from the public highway.

19 MR. FREIDIN: May I have one moment?

20 Q. Mr. Armson, you were also asked some
21 questions in relation to the Fahlgren Report and I want
22 to refer you to Volume XXXIV, the transcript for August
23 the 16th, 1988 and I am going to read to you from page
24 5582, line 24 to 5585, line 6.

25 It is a lengthy portion but I believe I

1 have to do that to put the statement that I want to ask
2 you about into context.

3 It actually starts out with a quote from
4 the Fahlgren Report:

5 "I was told that large clearcuts tended
6 to cause environmental and regenerative
7 problems. The Ministry's policy is to
8 reduce the size of permitted cuts.

9 Indeed, reductions in clearcutting have
10 become standard in the northcentral
11 region of the province where companies
12 have been asked to conform to this
13 policy. However, the Ministry does not
14 appear to collect or release statistical
15 information on clearcut size, so the move
16 to smaller cuts cannot be verified."

17 And Mr. Castrilli's question:

18 "Q. First of all, would you agree with
19 Commissioner Fahlgren in the last
20 paragraph that large cuts tend to cause
21 environmental and regenerative problems?

22 A. I don't think that I would
23 agree with that statement, that large
24 clear cuts tend to cause environmental or
25 regenerative problems.

1 Q. So you don't agree with
2 Flowers and Robinson in their 1976
3 report, you no longer agree with your
4 report nor article of 1976, and you no
5 longer -- "

6 You answered -- you interjected, I guess.
7 "A. Which I did talk about the size
8 of clear cuts in.

9 Q. You just talked about
10 uncontrolled clear cutting; is that
11 right?

12 A. That's correct.

13 Q. And you don't agree with
14 Commissioner Fahlgren in a report he
15 released in June of 1985; is that
16 correct, with respect to this issue?

17 A. As that statement stands, I
18 cannot agree with it.

19 Q. That is fine."

20 Then the Chairman asked you:

21 "Mr. Armson, do you agree with that
22 statement?"

23 And you said: "No, I do not agree with
24 it."

25 The Chairman said: "Would you tell us

1 why?"

2 And you answered:

3 "I would be pleased to, Mr. Chairman."

4 and your answer was this:

5 "The whole matter, if I may, of clear cut
6 size, I think has developed first of all
7 as a result of quite legitimate concerns
8 about regeneration and environmental
9 impacts over a period of time.

10 It is quite true in the mid-70s concern -
11 and I will attest to this from my own
12 experience - there were areas of large
13 clear cut, some of which were contiguous.
14 I have never seen anything approaching
15 50,000 acres in size. I have no idea
16 where that dimension came from, but
17 certainly several thousands of acres in
18 certain instances, not only on company
19 licences but, I would also add, on some
20 Crown management units. And what
21 happened then was that many
22 observations - and I am speaking now
23 particularly of the early to mid-1970s -
24 related the size of the clear cut to
25 these concerns. And I think, given the

1 period, and professional foresters were
2 many who did that, it is not -- it was
3 not an unexpected thing."

4 Now, my question is: Why wasn't that an
5 unexpected thing at that time?

6 A. I think that in some respects, Mr.
7 Cary's statement in 1976 and the evidence that has been
8 presented to the Board today I think covers, to some
9 degree, why.

10 I think at that time we were engaged in a
11 professional manner in carrying out regeneration
12 activities. We were at that time, because of increased
13 access dealing with larger areas; that is, being able
14 to get into areas because of all-weather roads, of
15 these recent clear cuts, and I don't think there is any
16 question that many of the foresters often - not always
17 those that were younger in their first flush of youth
18 as Mr. Cary described it - but others I think were
19 concerned and there was -- I believe, and I myself have
20 expressed that kind of concern in the 60s, but I guess
21 if you --

22 THE CHAIRMAN: Is that when your first
23 flush of youth was?

24 MR. ARMSON: Yes, in the 60s, I can
25 recall, Mr. Chairman, my being concerned about in

1 flying from Timmins to Kapuskasing in Beaver aircraft
2 and looking down and seeing at that time on areas that
3 had been clear cut "a sea of alder".

4 I have flown those areas many, many times
5 over - a matter I hate to say of some decade or two -
6 and in fact when I fly them I don't see any alder, the
7 alder is all virtually dead and there is now a sea of
8 conifers, to a large degree, of spruce.

9 What we didn't recognize was that when we
10 looked at many of these areas, because they were large,
11 certainly larger than in the earlier operations of the
12 40s and 50s we made a mental relationship, not an
13 unreasonable thing to do.

14 We were concerned about regeneration, we
15 saw the large areas and we saw brush and we saw
16 poplars, and so on, and we said -- and then of course
17 we didn't see all the conifers sometimes because they
18 were small, sometimes because they weren't there, and
19 sometimes just because of the visual appearance and we
20 said: There is a relationship.

21 As I believe we are now seeing from such
22 things as the NSR surveys as documented in the witness
23 statement of this panel, when we begin to look much
24 more objectively and also at areas over periods of
25 time, five years, ten years and the like, we begin to

1 see that in fact they are regenerated not necessarily -
2 and this is quite clear - to the species that we either
3 believe we should be having or, as indicated in the
4 SOARS report, even where we have carried out, to
5 necessarily carry what, in many instances, we would
6 hope that we would have achieved. In other words, we
7 have lost species. We have gone into that.

8 But I think that period of relating the
9 size was, I would say natural, but in retrospect and
10 hindsight a spireous relationship. And, in fact, when
11 we look for concrete data, look for concrete data on
12 the relationship between size of clear cut and either
13 regeneration or growth of regenerated trees, we begin
14 to find all kinds of anomalies and the anomalies tell
15 us that in fact the size per se is not probably the key
16 element and, in most of my experience is not, but you
17 could relate it to other factors.

18 MR. MARTEL: Well, with the anxiety that
19 you felt then and was expressed by a number of people
20 could create the anxiety that may be in the public's
21 mind today, some of that anxiety?

22 MR. ARMSON: I that is true, Mr. Martel,
23 and I think that is something that is very fundamental
24 to recognize, that often the concerns - and these are
25 expressed then in written statements and in public

1 statements - quite properly then become, if you like,
2 adopted.

3 We have the classic example, the one I
4 referred to in my witness statement and I can think of
5 a number of Metropolitan newspapers which carried a
6 photograph, actually taken in the Dryden area, of a
7 desert. And I can recall discussing that with the
8 reporter who wrote about that and saying to her, when
9 she showed me the picture before it was published: I
10 don't think that is a desert, it looks to me as if it
11 has been a site-prepared area.

12 And in that part of Dryden there are many
13 areas of sand and in the fresh -- in the cut-over with
14 site preparation, the kind they were using, there would
15 in fact be, from the aerial photograph, a considerable
16 amount of reflectance and it would look light.

17 She said: No, it must be a desert.

18 Well, that kind of thing in the large
19 media tends to be picked up and becomes a conventional
20 wisdom and that is really what we are dealing with.
21 And you are quite right, we often create our own myths
22 and we, in the profession, sometimes do that.

23 MRS. KOVEN: There are two ways of
24 interpreting what you are saying, though. I suppose
25 the first way of looking at it is that in fact a very

1 optimistic view is that it is a renewable resource and
2 we can do whatever we want to it; we can clear cut it,
3 we can do whatever we want, and it will renew itself,
4 eventually it will come back. And I think that is a
5 very uncomfortable thing to assume; we shouldn't be
6 assuming that.

7 And the other way of looking at it is that
8 in fact what happened is that the Ministry and the
9 industry responded to the concern about clear cut and
10 in fact started to manage them better, that you made
11 improvements in regeneration, and you were looking at
12 clear cuts as being a problem, you didn't totally
13 dismiss that possibility, but other improvements were
14 coincident with that as well.

15 MR. ARMSON: That is correct and I would
16 agree with you that the -- to take the position that we
17 can harvest and then walk away and it will revegetate
18 with whatever is -- first of all, that is not the
19 practice of forestry and professionally that is what I
20 am committed to and what the owners, the government and
21 the people of the province, it is my understanding, are
22 committed to.

23 There are, however - and here is where I
24 think we have -- there are within a given managed
25 forest areas of natural forest where I believe

1 professionally we may be quite justified in harvesting
2 a certain area and not reinvesting in that area
3 directly.

4 We may harvest it to nudge nature in a
5 certain direction by the way we do it, the time we do
6 it; we may do it without nudging nature, because nature
7 doesn't need a nudge in that situation or we don't
8 consider it worthwhile to nudge nature, and those will
9 always be areas.

10 But the key areas are those where we are
11 harvesting with a conscious purpose to either, by
12 natural regeneration and more specifically by the
13 investment, to in fact create a forest which will meet
14 the owner's management objectives for whatever reason,
15 whatever they may be.

16 MR. FREIDIN: Q. Now, Mr. Armson, I want
17 to refer you to a short portion of the Fahlgren Report.
18 I think Exhibit 161 was the portion that was filed as
19 an exhibit by Mr. Castrilli and I would like to refer
20 you to page 5 -- Chapter 5, page 21.

21 Do you have that page, Mr. Armson?

22 MR. ARMSON: A. Yes, I do, yes.

23 THE CHAIRMAN: What page number again?

24 MR. FREIDIN: 21.

25 Q. And I wanted to refer you to that

1 page 21, second paragraph. The second paragraph reads:

2 "Clear cut is by far the predominant
3 cutting method and is preferred by the
4 forest products industry for cutting
5 north of 50 where it is virtually the
6 exclusive method used. In 1983-84,
7 200,337 hectares of forest were clear cut
8 in Ontario, more than 20 times the area
9 cut by the shelterwood and select methods
10 combined. I, therefore, have focused on
11 the clear cut method."

12 And my question to you is: Does the
13 statement in relation to the number of hectares clear
14 cut in comparison to the number of hectares which were
15 harvested through shelterwood and select methods, as
16 described there, come as any surprise to you?

17 A. No.

18 Q. Why not?

19 A. Because the largest amount of
20 cutting, harvesting, that takes place in this province
21 on Crown lands is in fact in the boreal forest where we
22 are dealing almost entirely with even-aged stands which
23 have originated from, as I have described earlier,
24 natural forces.

25 The shelterwood and selection systems of

1 silviculture -- the word method is used here but I will
2 take that as meaning system - the shelterwood system is
3 used predominantly, one of the major species would be
4 white pine; it is also used primarily to create
5 even-aged stands, and white pine is a species that
6 normally grows in that fashion.

7 The selection system is used
8 predominantly with tolerant hardwoods such as maple.
9 Those occur in the Great Lakes/St. Lawrence forest
10 region and the extent of the operations in those two
11 regions, the lower part of the northeastern region and
12 the Algonquin region which comprise, for the most part,
13 that forest area, are relatively small.

14 Q. You stated that in the boreal forest
15 the areas were primarily uneven-aged?

16 A. No, even-aged.

17 Q. Even-aged management. What is the
18 significance of that in relation to the question as
19 asked?

20 A. That the mode of depletion, whether
21 it be by man or in fact by nature, is normally one in
22 which the entire stand is depleted at one time.

23 Q. Is there a reason man does it that
24 way?

25 A. Two reasons, one which is related --

1 two reasons, one of which is primarily related to the
2 professional side of management and that is that in
3 undertaking that, the species we are dealing with are
4 biologically adapted to types of treatment which come
5 about as a result of clear cutting.

6 And the second, of course, is it is a
7 very economical way to do it.

8 Q. Thank you. Mr. Castrilli described
9 the following hypothetical situation to you, Mr.
10 Armson, and he said:

11 "Assume an area was clear cut, if you cut
12 spruce and it returns to poplar is that
13 regeneration success?"

14 That was his question. Your answer was:

15 "It is regeneration success if that was
16 the management objective."

17 Now, without confining yourself, Mr.
18 Armson, to Mr. Castrilli's specific hypothetical
19 situation, could you explain why the management
20 objective would not always be to regenerate a stand to
21 the same species which was harvested or a more
22 desirable one?

23 A. Well, there are several reasons. The
24 most obvious one, perhaps, is that the species that you
25 are harvesting which has arisen by virtue of natural

1 forces is not the species - and we are talking now
2 about native species, native commercial species - is
3 not the species that is best suited or can produce the
4 growth, the higher amount of growth on that particular
5 site and that may be for simple historical reasons the
6 sequence of events.

7 So, in other words, you have an area in
8 which there is a merchantable - for the sake of
9 argument - jack pine forest but in fact the soils, the
10 conditions there in fact are more suitable for spruce
11 in that case and if spruce is one of the species that
12 you desired and, in fact in that unit you may have, by
13 virtue of the natural forest, a relatively small amount
14 of spruce forest area and you want to enlarge that with
15 a view to the objectives in relation to industry
16 supply, you would therefore move that.

17 And in fact within our management process
18 and in the Timber Management Planning Manual you will
19 see that there is a column -- one of the tables which
20 says: What is the existing working group species, what
21 is the proposed one? So part of management is normally
22 to move to the balance, if you like, of species that
23 come close to meeting the management objectives. So
24 one of the reasons would be what we call an off-site
25 species.

1 Another reason would be that we want to
2 . shift the balance. We have too much, in terms of our
3 long-term management objectives, of one species or
4 working group and we want to balance it.

5 Q. I don't whether it answered the
6 question.

7 A. Those I would -- the thing hinges
8 totally around the land base and existing forest base
9 and how you deal with that in relation to your
10 management objectives. I think those are the key
11 features.

12 Q. Okay.

13 Mr. Cary, I am going to read something
14 which you stated. I am sorry I cannot provide the
15 date, it is not an official transcript, it is something
16 that I had the reporter produce for me.

17 It was the cross-examination of you by
18 Mr. Campbell and I am going to read what you said and I
19 am going to refer a question as well to Mr. Gordon
20 arising from the quote.

21 You were asked the following:

22 "Would you see as reasonable a
23 requirement to set out for those who are
24 involved in the timber management
25 planning process before the..."

1 It has got to be mistyped, it says: "before the is risk
2 arrived at."

3 So, before something:

4 "...is arrived at in this process which
5 you will eventually be describing to us,
6 about how you go about and the public
7 involved in that planning, would you see
8 as reasonable a requirement to set out
9 for those involved in the process the
10 forester's professional judgment as to
11 what would be the result if an area is
12 cut and a proposed treatment or lack of
13 treatment is followed?

14 Do you see that as a reasonable sort of
15 thing to require as information for the
16 public in their involvement in the timber
17 management planning process?

18 A. And you are still talking this
19 prediction?

20 Q. What I am saying is: The
21 forester sets out his professional
22 judgment as to what will result in an
23 area if that area is cut and the proposed
24 treatment or lack of treatment is
25 followed. Would you agree with me that

1 that is a reasonable piece of information
2 that would be important to those members
3 of the public who are participating in
4 the timber management planning process?

5 A. The experienced unit forester
6 would be aware of what has happened over
7 the past year, so he would be aware of
8 that --"

9 Mr. Campbell interjected.

10 "What I am saying is -- what I am
11 suggesting to you is I have no doubt the
12 forester is able to do that, what I am
13 suggesting is that it might be a very
14 valuable input to those who really want
15 to participate in a meaningful way in the
16 timber management planning process to
17 have that forester set out what that
18 judgment is.

19 A. I think that judgment is embodied in
20 the silvicultural ground rules to some
21 extent in each timber management plan.

22 Mr. Campbell: Well, just a minute,
23 because I think the silvicultural
24 ground rules, they will tell harvest
25 method and so on, but I don't think..."

1 It then goes on and says:

2 "... here is what we expect the result to
3 be.

4 A. They set objectives for the forest
5 units."

6 All right. Now, my question relates to
7 the silvicultural ground rules that were referred to
8 and if I might, Mr. Cary, I want to refer the question
9 which arises from that rather than to yourself to a
10 practicing field forester -- well, first of all, could
11 you turn to page 65 of Exhibit No. 7 which is the
12 Timber Management Planning Manual.

13 Do you have that, Mr. Cary?

14 MR. CARY: A. Yes, I do.

15 Q. Can you advise me whether that is
16 what you were referring to when you were referring to
17 the silvicultural ground rules, the information which
18 would go in that table?

19 A. I was referring to that information
20 that would be contained in this table.

21 Q. Now, Mr. Gordon, I would like you
22 look at that document including the silvicultural
23 ground rules and the instructions which are on the back
24 of it at page 66. And, after you do that, I am going
25 to want to see whether you can provide me with an

1 answer to this question.

2 The question is: In Table 4.11, where
3 does it indicate what the expected result is for an
4 area after harvest, and also could you answer the
5 question as to whether there is any information in that
6 table regarding the type -- when it is filled out,
7 regarding the type of harvest method or renewal
8 treatment which is anticipated on the areas which would
9 be described?

10 MR. FREIDIN: Mr. Chairman, I am going to
11 be some time. This might be -- if we are going to have
12 a break, this might be a convenient time to have a
13 break. I know how long Mr. Gordon is going to need to
14 review it.

15 THE CHAIRMAN: How long are you going to
16 need, Mr. Gordon?

17 MR. GORDON: I think I am ready to take a
18 crack at it right now.

19 THE CHAIRMAN: You lose, Mr. Freidin.

20 MR. FREIDIN: No, go ahead, Mr. Gordon.

21 MR. GORDON: Well, first of all, if you
22 look at page 65 Table 4.11, if you look at the fifth
23 column it shows the method of harvest and previous to
24 that it shows the silviculture system, so you would
25 indicate perhaps if it was going to be clear cut,

1 method of harvest could be a clear cut in the winter.

2 Renewal treatment, under that you would
3 show the site-preparation method, whether it be
4 mechanical or prescribed burn and, in some cases, you
5 go into more detail as to what type of mechanical
6 site-preparation equipment you would be using.

7 Relative to regeneration, you would
8 indicate, for example, if you are going to plant the
9 area, seed the area, strip cut the area, perhaps leave
10 the area for natural regeneration. If you were going
11 to plant the area, you would indicate the species that
12 you would consider planting and, as well, perhaps the
13 number of trees per hectare you would initially plant.

14 As to what you would project happening on
15 that site --

16 MR. FREIDIN: Q. Can you just stop
17 before you get into what would happen on the site.
18 When you were describing the renewal treatment,
19 site-preparation and regeneration treatments, is the
20 approach that is actually going to be used some time --
21 are there options given as to you can use one of a
22 number of methods?

23 MR. GORDON: A. Yes, there is no
24 question that that is the case. You will have on the
25 left-hand column under the FRI working group, you will

1 have, for example, black spruce. The proposed working
2 group or forest unit, you will have whatever you are
3 looking for, and then relative to the renewal treatment
4 description, you may have one option, two options or
5 three options.

6 Q. So the first two columns would
7 indicate whether in fact one of the objectives was to
8 change the working group of the area that was going to
9 be harvested.

10 A. That is correct.

11 Q. Okay.

12 A. And, as well, as part of the overall
13 renewal treatment in the very right-hand column, you
14 would list what tending treatments, what maintenance
15 treatments you would be considering. For example, if
16 you were looking at black spruce on an upland site, the
17 site description was uplands site where you are
18 anticipating a lot of competition, you may list in the
19 tending column that you were anticipating perhaps
20 tending two years after, something like two to five
21 years because of the competition.

22 Relative to what you would anticipate
23 happening on that site, the only piece of information
24 that you have on that table is relative to what your
25 desired stocking level is at approximately year five

1 and that would be --

2 Q. Where do we see that?

3 A. That would be under the column
4 entitled Stocking Standards.

5 Q. The second last major column?

6 A. That's right. And within that major
7 column there is three divisions, and you will see DES
8 meaning desirable.

9 Q. All right. Can you just interpret --
10 there are three sort of sub-columns of the column
11 entitled Stocking Standards, can you just describe the
12 sort of information that would have to go in under each
13 of those, those particular sub-columns?

14 A. What they would usually do is relate
15 to the regional benchmark free to grow standards; that
16 is, the stocking portion of those standards unless you
17 were contemplating a different stocking standard.

18 If I was filling out the table and, for
19 example, my objective was to plant an area under the
20 desired stocking level, I might have 60 or 70 per cent
21 and since I spent money on that site I wanted a
22 reasonably high stocking level, and that would be
23 reflected in the number 60 to 70 per cent.

24 Q. That is your management objective?

25 A. That is correct, that is my specific

1 management objective for that treatment on that forest
2 unit.

3 Q. And you have described what that
4 management objective is, that is included in the...

5 A. That is correct.

6 Q. Continue.

7 A. However, I am willing to accept a
8 minimum stocking level, and very often what would be
9 put in in that table would be the 40 per cent that you
10 would see in the regional free to grow benchmark
11 standards.

12 Relative to counting up the trees that
13 count towards the stocking level, I would list the
14 species that would be considered acceptable in that
15 third column. That is, where it says minimum to
16 acceptable species, I would list the species that would
17 count towards the stocking.

18 Q. Can you tell me, does this table --
19 does it form part of the draft timber management plans
20 and if there sort of any changes there too which are
21 made to the timber management plan from the time you
22 started to the time you get it approved; do you have
23 that sort of Table 4.11 in the draft?

24 A. Yes, you do.

25 Q. And during are you aware as to

1 whether or not at the four opportunities for public
2 information or public -- I mean public inspection or
3 public review of the timber management plan through the
4 preparation stage and the approval and review stage,
5 are you aware whether during those occasions the
6 information that is contained on Table 4.11 is
7 available to the public?

8 A. I believe you have got me at a
9 disadvantage here, I can't recall all four stages.

10 From my experience, the first stage is
11 where you put out a notice to advise the public that
12 they are invited to participate in the planning
13 process. At that point in time you would not have such
14 details available.

15 However, as you move through perhaps on
16 open-house, background information and, as well,
17 developed a draft plan, such information would be
18 developed and, of course, when the final plan is
19 approved that would also be available, that information
20 would be available in that plan.

21 Q. And I understand that the planning
22 process or details of it will be discussed in Panel 15?

23 A. That's correct.

24 Q. I believe fairly close to the end of
25 the hearing you were asked the question about whether

1 or not you could actually have a standard -- the
2 stocking portion of the free to grow standard but you
3 could actually have a management plan which was
4 something less than what the benchmark standards said.
5 Do you recall that?

6 A. I remember that question.

7 Q. You referred to a portion of the free
8 to grow regional benchmark standards which indicated
9 that if that occurred you would have to document a
10 change -- such a change in the plan and your rationale
11 for the change?

12 A. That is correct.

13 Q. Would such a statement of a change
14 and a rationale for it be included in the material
15 which would be available for public review or public
16 inspection during the timber management planning
17 process?

18 A. At some point in time before the plan
19 is approved that would be available.

20 Q. Thank you. Mr. Cary, I would like to
21 refer you to evidence that you gave on August the 16th,
22 1988, Volume XXXIV at page 5619.

23 I am going to read to you from 5619, line
24 9 to page 5620, line 9 and these questions arose out of
25 some examination about the Dixon report, Document 9.

1 The question -- you were being cross-examined by Mr.
2 Castrilli.

3 "Q. Mr. Cary, you are now on to Document
4 9, page 125, the item known as Item 5,
5 modified harvest cutting. Would you
6 agree with me, Mr. Cary, that what Mr.
7 Dixon is saying under that heading is
8 that there was industry opposition for
9 the use of modified cutting and industry
10 was requesting increasingly large
11 subsidies for its use. Is that the gist
12 of that?

13 A. That is what Mr. Dixon says.

14 Q. Your answer is yes?

15 A. Yes.

16 Q. Can you also confirm for me, Mr.
17 Cary, that the advent of the forest
18 management agreements has reduced the
19 amount of modified harvesting,
20 notwithstanding that the FMA is a
21 substantial subsidy program for, among
22 other things, which should make road
23 building, which should make modified
24 cutting more feasible? Isn't that what
25 Mr. Dixon is saying in that section?

1 And your response, Mr. Cary, was:

2 "Yes, he is saying that the area of
3 modified harvesting cutting, particularly
4 in spruce stands has declined on FMAs. I
5 would have to look at the records there
6 to confirm that. I haven't done that."

7 Now, in relation to the statement where
8 you said: Yes, that's what Mr. Dixon is saying, the
9 area of modified harvest cutting, particularly in
10 spruce stands has declined on the FMAs, could you
11 advise whether there is any explanation for why there
12 was a reduction in the amount of modified harvest
13 cutting because of the introduction of the FMA program?

14 MR. CARY: A. I believe I can, and Mr.
15 Armson may like to comment on this as well.

16 The reduction that I believe happened was
17 because the FMA holders chose to proceed with a more
18 reliable regeneration treatment method and they, in a
19 large measure in the early years of the FMAs,
20 substituted modified harvest cutting practices with
21 planting.

22 It is not meant to infer that there was a
23 reduction in regeneration treatment, there was a
24 replacement of modified harvest cutting with planting.
25 So there was a switch there.

1 They chose that -- because of the
2. contractual nature of the agreement, they chose to go
3 for what they considered to be a more reliable, more
4 timely method of regeneration.

5 Q. Can you add anything, Mr. Armson?

6 MR. ARMSON: A. I would perhaps expand
7 on that to a degree.

8 I think you have to recognize that the
9 companies entering into agreements, in the initial
10 years particularly, did not have a great deal of
11 expertise. Yes, they wanted to reduce the risk of not
12 getting the new crop, the new forest established for
13 which they then -- they had a legal responsibility.

14 They also - and I believe I would be
15 correct here - wished to ensure that the species that
16 they were primarily interested in would be the ones
17 that would be the dominant ones in that new forest.

18 And so you had a reduction in risk,
19 increasing the amount of species, and often that would
20 be black spruce or jack pine, but black spruce, for
21 example in the clay belt instance and, at the same
22 time, by planting the -- assumed quite properly that
23 they could reduce the time over which that new forest
24 would grow until it was harvested from the rotation age
25 of the natural forest.

1 And that was very -- certainly those
2 three factors were uppermost in their minds from
3 discussions with them at that time of negotiation.

4 Q. Thank you.

5 Mr. Gordon, I have a question for you.
6 Mr. Castrilli asked you a number of questions regarding
7 survival. He spent some time dealing with the
8 comparison between the results of second-year survival
9 assessments and fifth-year survival assessments. Do
10 you recall that line of questioning?

11 MR. GORDON: A. Yes, I do.

12 Q. He made the point through his
13 questioning that fifth-year stocking -- pardon me,
14 survival assessment results in Exhibit 169 - those were
15 the 1974 MacKinnon results - were lower than
16 second-year survival rates, so fifth-year survival
17 rates were lower than second-year.

18 Mr. Gordon, can a comparison of
19 second-year to fifth-year survival rates result in the
20 survival rate going up?

21 A. No.

22 Q. Why not?

23 A. Because when you do a survival
24 assessment, the way you set out the survey is you put
25 pins beside the trees that you planted and you only go

1 back to look at those specific trees when you are doing
2 your survival assessment.

3 And so if you go there in the second year
4 and you have 25 pins and there are 20 trees alive,
5 there are not going to be 21 trees alive when you go
6 back in the fifth year, it is impossible.

7 Q. It wasn't a trick question.

8 Mr. Gordon, Mr. Castrilli also referred
9 you during his cross-examination to Dean Baskerville's
10 Report and I would like to refer you to that report,
11 Exhibit 16.

12 Do you have that?

13 A. Mm-hmm.

14 Q. Now, if you could turn please to page
15 74. Mr. Castrilli identified a number of selected
16 portions in which Dean Baskerville commented on the
17 Ministry's ability to retrieve silvicultural
18 information, and at page 74 he read to you the first
19 five or six lines under the heading: Information
20 Problems. He says -- have you got that?

21 A. Yes, I do.

22 Q. "There are substantial problems in
23 the Ministry with respect to handling
24 information. In every case where
25 information was sought by the audit it

1 was in existence, but the number of times
2 when it was not retrievable in a usable
3 form was alarming. It is exceedingly
4 difficult to get clear data on many
5 forests on timber management matters. "

6 Now, this question is for either you or
7 for Mr. Armson who had responsibility in relation to
8 the action plan.

9 Can you advise me whether Dean
10 Baskerville made any comment on the quality of the
11 Ministry's information database?

12 MR. FREIDIN: And, Mr. Chairman, rather
13 than play cat and mouse with the witnesses, I would
14 refer them to the next page, page 75.

15 Q. And if you look at the second full
16 paragraph, Mr. Gordon, will you please read what Dean
17 Baskerville said about the subject matter that I am
18 interested in in the last sentence of that paragraph.

19 MR. GORDON: A. The last sentence reads
20 on the second full paragraph, page 75:

21 "There is a good resource database in
22 the Ministry that is not being converted
23 to a good resource management information
24 source."

25 Q. Thank you. Mr. Armson, you stated on

1 a number of occasions throughout the examination of
2 Panel No. 4 that if an area is untreatable, as you have
3 defined it, the area will regenerate to commercial tree
4 species through solely natural means. Am.

5 I right so far?

6 MR. ARMSON: A. Yes.

7 Q. And you have testified that the
8 consequences of not treating an area in comparison to
9 an area which is treated is that on the untreated area
10 the forest manager has less control over the species
11 composition of the new forest and that the timing of
12 the regeneration will be affected.

13 Is that an accurate statement?

14 A. Yes.

15 MR. CAMPBELL: Just a minute. Mr.
16 Chairman, this is clearly leading the witness. If
17 there are conclusions to be drawn from the testimony
18 they have got to be drawn from the testimony given
19 in-chief and in cross-examination and properly in
20 direct, but I don't think it is proper in redirect to
21 put conclusions and summaries of the evidence to the
22 witness and say: Is that a correct statement of your
23 testimony.

24 That is clearly leading.

25 THE CHAIRMAN: Mr. Freidin --

1 MR. FREIDIN: All right, I will keep that
2 in mind, Mr. Chairman.

3 THE CHAIRMAN: We want to expedite the
4 proceedings, but I think in order to get the most out
5 of it we still have to follow the adversarial rules.

6 MR. FREIDIN: I agree, Mr. Chairman.

7 Q. Mr. Armson, is it reasonable in your
8 personal judgment to refrain from harvesting those
9 areas, those untreatable areas, where prior to the
10 harvest it is possible to predict whether that area
11 might become untreatable after harvesting?

12 Do you understand the question?

13 MR. ARMSON: A. Yes, I do, and I
14 believe --

15 MR. CASTRILLI: Mr. Chairman, I have a
16 problem. I haven't yet heard Mr. Freidin indicate
17 where this matter was raised in cross-examination.

18 He has had an opportunity to deal with
19 this matter in-chief. If he has dealt with it, good or
20 bad, he has to live with it. I would like to know
21 where this matter was dealt with in cross-examination,
22 to ensure the subject of what he is asking now is
23 proper re-examination.

24 MR. FREIDIN: I cannot refer the witness
25 to a particular passage and if my friend -- I look for

1 your direction.

2 MR. CAMPBELL: That wasn't part of my
3 cross-examination.

4 MR. FREIDIN: Mr. Chairman, let's leave
5 it, I will go on. I have another question. It is all
6 right.

7 Q. Mr. Gordon, Exhibit No. 171 was an
8 excerpt of an NSR, the not satisfactorily regenerated
9 manual -- that may not be true, just hold on a second.

10 I am sorry, I was correct. It is an
11 excerpt of the NSR manual which indicates that a cause
12 of an area classified as NSR 4 and 5 could be
13 harvesting. Do you have that document?

14 MR. GORDON: A. What page is it in the
15 manual?

16 Q. The page which Mr. Castrilli provided
17 was page 5 entitled: NSR Classes.

18 A. Yes, I have it.

19 Q. That was the document that Mr.
20 Castrilli had given to you and he was questioning, he
21 indicated that a cause of an area classified as NSR 4
22 and 5 could have been harvesting.

23 Mr. Castrilli suggested to you that it
24 did not make sense to harvest those areas and you
25 disagreed with his proposition.

1 A. That's correct.

2 Q. Why do you disagree with his
3 proposition?

4 A. If you can predict that an area may
5 become, at some point in time, classified as NSR 4 or
6 5, I do not see as to why that would cause you not to
7 harvest the area.

8 If you are putting in a road system to
9 take out volumes in that area and while you are there,
10 from a logging point of view, there are advantages to
11 taking as much wood as possible and while you may not
12 be able to treat that area at a reasonable cost, there
13 is no question, based on my experience, that the site
14 will revegetate and come back to commercial tree
15 species.

16 While it may not come back exactly to the
17 tree species that were on that site initially, in my
18 estimation I still believe that that is acceptable.

19 Q. Thank you. Mr. Gordon, could you
20 refer to your copy of Exhibit 172. It is one of the
21 copies of the Professional Forester that was referred
22 to during the cross-examination.

23 A. I have it.

24 Q. This is the copy of the Professional
25 Forester in which the opinion of Mr. Chaudhry is

1 contained and I would ask you to look to the second
2 page, the last paragraph -- the beginning of the last
3 paragraph on that page starts with: "The major
4 emphasis...", do you have that, under the heading -- on
5 the page which has Opinions right at the bottom
6 right-hand corner.

7 A. Okay, I have that.

8 Q. "The major emphasis..." Would you
9 take a moment, please, and read that entire paragraph.

10 A. Okay.

11 Q. All right. Now, still on the page
12 that you are on, Mr. Castrilli referred you to sections
13 of this particular paragraph I believe at different
14 times and I want to direct you to one of the statements
15 that he referred you to and it is on that last page
16 about nine lines down where it starts:

17 "There are no traditions..."

18 A. I have it.

19 Q. It says:

20 "There are no traditions of continuously
21 monitoring treated areas for further
22 treatment until they are free to grow."

23 That section was quoted to you by Mr.

24 Castrilli and you were asked by him whether you agreed.

25 Your response was:

1 "I don't agree that that tradition is
2 necessary. He is referring to all
3 treated areas and I disagree with that."

4 Could you explain why the reference to
5 all treated areas caused you to disagree with the
6 comment, or was that the reason that you disagreed with
7 the comment?

8 A. The way I took the question was that
9 we should have a tradition of going back to every
10 project, at least as Mr. Chaudhry recommended, twice in
11 the first year and at least once in subsequent years
12 and, as Mr. Chaudhry said, until it is free to grow;
13 that is, in order to determine the need for cleaning or
14 other release measures.

15 And, in general terms, if you have an
16 appreciation of the sites that you are dealing with,
17 and, for example, jack pine where we have very good
18 initial survival when we plant trees, it is not
19 necessary to go back there twice in the first year or
20 every year thereafter once until the stand is free to
21 grow.

22 For example, on such sites our survival
23 rates are consistently high and, as well, on a high
24 portion of our jack pine sites we do not have major
25 competition problems so, therefore, it is not necessary

1 to go back continuously to monitor.

2 There is no question that you should go
3 back a number of times and that will vary based on
4 specific site conditions that you are dealing with and,
5 as well, the priorities that you must set as a unit
6 manager and the tools and resources available to you.

7 Q. Thank you. Mr. Armson, during the
8 question arising from that particular exhibit a number
9 of questions arose regarding recordkeeping.

10 MR. ARMSON: A. Yes.

11 Q. Mr. Martel posed a question as to
12 whether the head office of the Ministry knew what was
13 going on in the field regarding results. And in
14 reference to regeneration surveys you said:

15 "In addition to records kept there are
16 decisions which are made by the
17 professional in the field based on visual
18 observations which don't lend themselves
19 to reporting."

20 I didn't get all your words down and you
21 said something about:

22 "...must be accountability..."

23 And I lost the train.

24 "Similar observations which don't lend
25 themselves to reporting, there must be

1 accountability. To hamstring them I
2 think -- "

3 Let me go back. I will take out the
4 reference to the accountability and I think I can
5 accurately give you the gist of what you said.

6 "In addition to records kept there are
7 decisions which are made by the
8 professional in field based on visual
9 observations which don't lend themselves
10 to reporting. To hamstring them with a
11 rigid documentation for documentation
12 purposes only is not very productive."

13 What did you mean by rigid documentation;
14 you didn't want to hamstring them with a rigid
15 documentation?

16 A. Well, I would come back to Mr.
17 Gordon's previous statement. What I had in mind was
18 that under certain conditions - and Mr. Gordon
19 specifically referred to the regeneration of jack pine
20 in certain conditions - and with the body of experience
21 I think it would be unwarranted to in fact demand that
22 there be a rigid survey and a periodic analysis
23 necessarily of those types of conditions which in fact
24 by experience and in the general, professional level we
25 know what we can do.

1 I think we mentioned earlier that jack
2 pine is a species and many of the conditions we have
3 quite a sophisticated level of dealing with it. There
4 are other areas where we need -- there is a need for
5 documentation and meaningful documentation, and I
6 believe Dean Baskerville referred to that, for
7 management decision-making. There is also a need for
8 appropriate documentation to inform the owners, the
9 public properly of what is going on with their
10 resource.

11 But here we are talking about
12 documentation which is related to the professional
13 decision-making, at least I take it in this area, by
14 the manager at the unit level, and I think here is
15 where some degree of flexibility is absolutely
16 necessary, otherwise the owners are going to have a lot
17 of wasted effort.

18 Q. Thank you. Mr. Armson, I would like
19 to refer you to the SOARS report.

20 MR. FREIDIN: Mr. Chairman, I am going to
21 ask a number of questions on the SOARS report. If you
22 are planning a break this may be a convenient time.

23 THE CHAIRMAN: All right. I think this
24 may be an appropriate time. We will take 20 minutes.

25 MR. FREIDIN: Thank you.

1 ---Recess taken at 3:25 p.m.

2 ---Upon resuming at 3:55 p.m.

3 THE CHAIRMAN: Thank you. Be seated,
4 please.

5 MR. FREIDIN: Q. Mr. Armson, I want to
6 ask you a few questions about the SOARS report which is
7 Document No. 27 in the witness statement. It starts on
8 page 221.

9 Now, during cross-examination from Mr.
10 Castrilli, Mr. Armson, in relation to the series of
11 tables which appear at the back, the ones which were
12 done based on a -- some time after the SOARS data was
13 actually collected, you said to Mr. Castrilli that
14 there was no document which indicated the free to grow
15 standards which were used for preparing tables
16 commencing on page 238.

17 And my question for you is: That even
18 though there is no document which indicates which free
19 to grow standards were used, can you advise what free
20 to grow standards were used in making the determination
21 reported in the tables that indicate whether areas were
22 or were not free to grow?

23 MR. ARMSON: A. They used the data which
24 they had on heights -- heights, absolute height for the
25 species.

1 Q. Mr. Armson, I don't want you to tell
2 me what they looked at. I was asking whether you can
3 advise me what free to grow standards did they test the
4 information against, did they match the information
5 against?

6 A. They used the height standard, I
7 believe, that was in the FMAs that we have had at the
8 time because this was done before there was a
9 finalization of the regional standards.

10 Q. All right.

11 A. They used that height standard, that
12 was one metre.

13 Q. All right.

14 A. They also used the density, the
15 numbers per unit area, in relation to their conversion
16 of those to a related stocking and, in this case, the
17 minimum number would be - in terms of number of
18 stocking - would be 40 per cent, I understand they
19 related it to that.

20 Q. All right.

21 A. The question of competition which was
22 a third criteria, they could not -- which is something
23 which is judged in the field, they were not able to do
24 from the actual numerical data on the sheets of paper
25 in the computer system and they made a judgment of that

1 in relation to just the data regarding other species
2 than the desirable or the non-desirable species.

3 Q. Thank you very much. Now, in the
4 SOARS report, if I can refer you to page 238.

5 A. Yes, I have that.

6 Q. And if you look at page 238 there is
7 a table, Roman numeral III at the bottom.

8 A. Correct.

9 Q. You have got the same numerical
10 description of a table on page 240 and 242; is that
11 correct.

12 A. That is correct.

13 Q. Could I refer you to -- keep that
14 book in front of you or that report in front of you,
15 and would you also open the -- look at page 37 of the
16 witness statement.

17 A. Yes, I have that.

18 Q. And I would direct your attention to
19 56, sub-paragraph (c) which says:

20 "Overall about 25 per cent of the
21 artificially regenerated areas still did
22 not meet criteria for inclusion as part
23 of the MAD base."

24 Can you advise whether that paragraph
25 refers to the results reported in the tables, referred

1 to as Roman numeral III on the three pages I indicated?

2 A. Yes, that's correct.

3 Q. In cross-examination to Mr.

4 Castrilli, Mr. Armson, you indicated that you reported
5 the results the way you did in the tables, Roman
6 Numeral No. III, because you wanted to highlight the
7 fact that areas did not meet free to grow.

8 In direct evidence, in relation to those
9 tables, you stated that although the stands did not
10 meet either density or free to grow for any of the
11 three desired species, that the stands could be free to
12 grow for a commercial tree species other than the three
13 desirable ones, but you indicated that the records
14 didn't permit the people who were reviewing the records
15 to actually be definitive either one way or the other
16 whether the areas in Roman numeral III were or were not
17 free to grow?

18 A. That is correct.

19 Q. Now, the two versions are somewhat
20 different in that in direct you indicated that it could
21 be free to grow perhaps but they couldn't really tell,
22 I mean free to grow in another commercial species.

23 A. Yes.

24 Q. And in cross-examination you didn't
25 make such a statement. Which version do you want the

1 Board to accept?

2 A. Well, as I explained to the Board,
3 the report was prepared not for this hearing but for
4 senior management of the Ministry and throughout the
5 report the emphasis and, in fact at their request, if
6 you like, the translation of the plot data to the --
7 whether the areas met the free to grow standards for
8 the desired species or had density and didn't meet free
9 to grow, the focus was on the desirable species.

10 So that item No. III which is on page
11 238, 242 and so on, that was an item specifically that
12 related to the desired species, the three conifer
13 species. Whether or not -- and again, that perhaps is
14 therefore leading to the ambiguity on page 37. Whether
15 those areas met the free to grow for some other species
16 was another matter.

17 Q. Thank you very much.

18 Mr. Cary, on Friday Mr. Campbell began
19 his cross-examination by referring to certain portions
20 of the Forest Production Policy Options Document. Do
21 you recall the questioning in relation to that?

22 MR. CARY: A. I do.

23 Q. Now, in that cross-examination he was
24 cross-examining regarding sustained yield and you
25 indicated to him that one must have concern or that you

1 must have concern for environmental matters.

2 Do you recall giving that response?

3 A. Yes.

4 Q. Can you advise me, does the Ministry
5 of Natural Resources share such concerns?

6 A. They do.

7 Q. Can you advise whether the Ministry
8 of Natural Resources does anything about that concern
9 in terms of timber management practices in the field?

10 A. I can. I believe the words that Mr.
11 Campbell was using were in the 1972 Forest Production
12 Policy Document and since then there have been all
13 sorts of environmental considerations.

14 We have had the formalization of
15 integrated resource management as a Ministry policy, we
16 have yield regulation in place and you heard about
17 that, we have guidelines for the protection of moose
18 habitat, fish habitat, tourism guidelines, we have a
19 new timber management planning process, we have an area
20 of concerned planning process.

21 Q. Which is within the timber management
22 planning process?

23 A. Yes, within the timber management
24 planning process.

25 Q. Yes.

1 A. So I believe that over the period
2 since then indeed we have been very concerned with
3 environmental safeguards and have placed many of those
4 safeguards in place.

5 Q. Thank you. I understand that the
6 subject matters that you referred to which have not
7 been dealt with by this panel are going to be dealt
8 with by later panels?

9 A. That is correct.

10 Q. Thank you. Mr. Armson, again
11 referring to questioning from Mr. Campbell regarding
12 silvicultural guidelines, Mr. Campbell said to you --
13 questioned you in the form of a sentence, he said:

14 Is it not the purpose of the
15 guidelines -- pardon me.

16 "It is not the purpose of the
17 silvicultural guidelines to specify
18 mandatory practices."

19 And your answer was:

20 "Correct."

21 Do you recall the question and answer?

22 MR. ARMSON: A. Yes, I do.

23 Q. Could you explain the rationale for
24 the guidelines not specifying mandatory practices?

25 A. The reason is, first of all, these

1 are guidelines to be used provincially and, therefore,
2 to specify practices in a document at that level of
3 information, if you will, or direction would in fact
4 not be proper because the conditions under which the
5 actual implementation of practices takes place is at
6 the unit level and under a variety of circumstances
7 which could not, in fact, in any reasonable way be
8 included in a document, or if you attempted to include
9 them, you would have a document which no one would find
10 the time to read through anyway. It would be massive.

11 So the guidelines have dealt with the
12 biological principles as they relate to the species;
13 they include the relevant information in which we have
14 drawn upon, primarily experience from the management
15 practices that have been undertaken in this province,
16 and brought them together to provide for other
17 foresters the benefit of what has been learned indeed,
18 and some of the mistakes, if I may add.

19 And also it also gives from those two
20 bodies, one of knowledge about the species and
21 conditions and the other from experience, it suggests
22 that in ranges of conditions these are the items or the
23 types of practices that should be considered.

24 And, as I say, the unit forester in
25 developing the management plan, it is mandatory that he

1 read and be familiar with those guidelines on that for
2 those reasons.

3 Q. Thank you. Now, sort of carrying on
4 from part of what you said in your answer, you made
5 reference to pulling together information in relation
6 to experience, you also made reference to sometimes
7 experiences were in relation to failures.

8 You were asked some questions in
9 cross-examination I believe this morning by Mr.
10 Campbell in relation to the subject matter of
11 information transfer. And do you recall that you gave
12 some evidence about TDUs, which are what, technology
13 and development units?

14 A. That is correct.

15 Q. Right. In that evidence you
16 described a formal method of information transfer of
17 things such as successes and failures.

18 Can you advise the Board whether there
19 are any informal processes used within the Ministry of
20 Natural Resources, particularly within the field
21 organization, that accomplishes the same goal?

22 A. Yes, there are workshops and meetings
23 that are held. Some of these are sponsored by the
24 Ministry either at the regional level or provincial
25 level. There are also meetings that are sponsored, if

1 you will, brought together by the technology
2 development units which I have mentioned and, in
3 addition, there are meetings, symposia and so on, which
4 are organized, and I am speaking here primarily for
5 management foresters by the Ontario Forestry Research
6 Committee which is in fact holding their symposium here
7 on investments in forestry in relation to silvicultural
8 practices in November.

9 Q. Could you advise me how often these
10 symposia are held and just generally what is the
11 approach taken at these?

12 A. Well, the symposia sponsored now by
13 the Ontario Forest Research Committee, these are annual
14 and it is the successor to a series of symposia which I
15 believe have been held since the early 1970s annually
16 on topics that are directed primarily to the management
17 forester and sometimes the papers are given by research
18 foresters but of information, techniques and so on,
19 relating primarily to management practices.

20 Q. Thank you.

21 Dr. Osborn, Mr. Campbell asked Mr. Armson
22 whether it was completely unreasonable after a phase-in
23 period - and I am assuming he was referring to a
24 phase-in period of the timber management planning
25 process - whether it was completely unreasonable after

1 such phase-in period that there be some sort of
2 requirement that the amount harvested must be tied to
3 the amount which is declared free to grow in a
4 desirable species so as to link it more directly to the
5 sustained yield concept.

6 Mr. Armson responded and I didn't get
7 everything down. One comment he made was FMA holders
8 have powerful incentive to regenerate and he also
9 indicated that a direct tie would not be necessary.

10 My question for you is: Can you advise
11 me whether the province has in place today anything
12 which has the effect that Mr. Campbell's questions
13 suggested; that is, a reduction in the amount harvested
14 tied in some way to the area which is declared free to
15 grow in a desirable species?

16 DR. OSBORN: A. There is a link between
17 the area harvested and the area that is declared free
18 to grow, and the most obvious link is the mathematical
19 relationship that takes place in the yield regulation
20 procedure, the determination of maximum allowable
21 completion.

22 And as has been explained the base, the
23 set of numbers that form the base for that maximum
24 allowable depletion is the area that is free to grow.
25 The harvesting will deplete that base, make it smaller;

1 free to grow will augment that base, make it larger.
2 So that process of calculating the maximum allowable
3 depletion has within it a link between the area
4 harvested and the area that is declared free to grow.

5 Q. Mr. Gordon, could you refer to page
6 205 of the Timber Management Planning Manual, Exhibit
7 No. 7. Do you have that, Mr. Gordon?

8 MR. GORDON: A. I have it.

9 Q. Now, Mr. Campbell spent some time
10 with you this morning asking you about the subject 5.8,
11 non-treatable productive forest areas.

12 Now, he referred you to the first
13 paragraph under that heading and, in particular, he
14 referred you to the factors which could make treatments
15 of a harvested area either uneconomic or impractical to
16 treat, and I believe that those are referred to in the
17 first full paragraph; is that correct?

18 A. That is correct.

19 Q. Now, after some lengthy questioning
20 from Mr. Campbell, you did state or did give evidence
21 that it is possible to predict these things before
22 cutting; i.e., whether in fact you were going to
23 encounter these sorts of conditions such that it might
24 in fact make treatment uneconomic and practical.

25 A. Yes, I did say that.

1 Q. Now, in responding to that series of
2 questions regarding the non-treatable productive forest
3 area, you started to indicate to Mr. Campbell that one
4 must -- and I think I have got your words down fairly
5 accurate, although I don't have the transcript:

6 "One must understand all those real life
7 things necessary to make a prediction..."
8 And you were attempting to continue but Mr. Campbell
9 cut you off in mid-sentence and he said:

10 Well, if you ignore the practicalities of
11 the situation, then he sort of put the question to you
12 again.

13 Now, I would like you, Mr. Gordon, to
14 infuse some reality into the answer, if you could do
15 that, and I would like to ask you after that
16 question -- or you can address this question: Whether,
17 in your professional judgment, you believe that it is
18 reasonable -- pardon me, it is unreasonable to ignore
19 the practicalities when one is making decisions about
20 timber management?

21 Now, I will repeat the second sentence if
22 you can't remember it when you give me the answer to
23 the first, but can you deal with those two areas,
24 please?

25 A. You are going to have to repeat the

1 second question later.

2 Q. Okay.

3 A. What I finally agreed to saying, when
4 Mr. Campbell was cross-examining me was that: Yes, you
5 could predict those areas that potentially could be
6 non-treatable.

7 And the reason I said that is there is no
8 question you could and, you know, just how good your
9 prediction will be, it will probably vary, but you
10 could make an effort and predict.

11 In my estimation, the only way you could
12 do that and do it properly is by going out into the
13 forest and walking and walking an awful lot. And we
14 have 200,000 hectares of cut-over each year, and if you
15 are going to predict what proportion or what areas are
16 going to be untreatable, you are going to have to walk
17 almost 200,000 hectares and you just can't afford to do
18 that.

19 And, as well, if you do identify those
20 areas that are non-treatable and, for example, there
21 was a rule that said you shouldn't cut them because you
22 can't treat them, you would then have to go back to the
23 office and make a decision as to whether you were even
24 going to go into that area to cut, but you could cut.
25 If you then made that decision, then what you would

1 have to do is go back into the area before it is cut
2 and mark those areas that are non-treatable so that
3 they would not be cut.

4 So when I put all that together, to me
5 that is impractical and unreasonable and, in my
6 estimation, it is an impossibility.

7 Q. And in terms of sound timber
8 management practice, you believe that to do the sorts
9 of investigations that you refer to is required or are
10 reasonable?

11 A. No.

12 Q. Thank you. I am not going to ask you
13 a second question, I think I got the answer.

14 Mr. Gordon, when you were determining
15 whether an area will fall into the non-treatable
16 productive forest land category, and looking at this
17 particular passage I referred you to in the Timber
18 Management Planning Manual where there are a number of
19 factors referred to, would you make the assessment
20 based on one factor only or would you look at the
21 information in relation to all of the factors together
22 as one package, or...

23 A. If I was to make that assessment --
24 if I was to make that assessment, I would have to
25 consider all of the factors at once.

1 Q. Why?

2 A. Well, for example, you may have a
3 site where, for example, there are extremes in
4 topography, and that on its own may not stop you or
5 prevent you from treating that site, for example,
6 site-preparation equipment, mechanical equipment,
7 moving big machinery over that slope.

8 However, if that slope not only has -- is
9 an extreme slope but there are excessive boulders or
10 rocks on that slope, that in combination with the slope
11 may lead you to conclude that it is non-treatable.

12 Q. And the more factors, the more
13 permutations and combinations you can figure out, I
14 suppose?

15 A. That is correct.

16 Q. Thank you. Again, for you Mr.
17 Gordon. Mr. Campbell described the following
18 hypothetical situation to you, he said:

19 Basically you have got rock with pockets
20 of good soil and good age over height relationships,
21 all of the soil is fully utilized, but taking the area
22 as a whole it is only 30 per cent stocked because of
23 the existence of the rock.

24 You indicated that it could be cut even
25 if it was barren and scattered, but you disagreed with

1 the proposition that Mr. Campbell put to you that in
2 that situation the area would never be free to grow in
3 accordance with the regional benchmark free to grow
4 standards.

5 Now, when you said that, Mr. Campbell
6 responded or commented, almost with a question, he
7 said:

8 "But no benchmark standard is lower than
9 40 per cent."

10 And your answer was:

11 "You are telling me this, you are telling
12 me that this is an old stand and it may
13 not be stocked to free to grow
14 standards."

15 Now, Mr. Gordon, is there some
16 significance to the fact that in this hypothetical and
17 in that questioning he was describing the stocking of
18 an old stand?

19 A. Yes, I think what we have to
20 recognize is that stocking levels within a stand will
21 change over time, and within this old stand in the
22 hypothetical Mr. Campbell had said that the stocking
23 level was 30 per cent and I accept that.

24 It is not unreasonable to expect that
25 potentially that site, once it is harvested, could

1 reach a stocking level of 40 per cent; that is, when
2 you measure stocking levels for small trees versus big
3 trees, you tend to measure them in different ways.
4 With small trees you measure by the number of trees and
5 how they are spacially distributed; whereas, with
6 larger trees, as I believe Dr. Osborn explained perhaps
7 in Panel 4, you may do it by looking at basal area or
8 whatever.

9 So there is a different way of measuring
10 stocking, and just because you only have 30 per cent
11 when you harvested, that does not mean that you could
12 not have 40 per cent perhaps at year 8 or 12 when you
13 will be doing your free to grow survey and, therefore,
14 potentially that new stand could be declared free to
15 grow.

16 Q. Does Exhibit 190 behind you have
17 anything to do with the subject matter of your answer?

18 A. Well, if we assume that this is
19 stocking, and Mr. Campbell's example showed a stocking
20 level of 30 per cent.

21 Q. At rotation?

22 A. At rotation, as you can see over
23 time, the number of trees on the site tends to decrease
24 and, therefore, there is a relationship between density
25 and stocking. And so, therefore, it would be possible

1 to have a higher stocking level at year five or ten on
2 such a site.

3 Q. High enough for it to be free to
4 grow?

5 A. That is correct.

6 Q. Thank you. Again for you, Mr.
7 Gordon. If I could refer you to page 172 of Exhibit
8 No. 7, the Timber Management Planning Manual, and the
9 descriptions of the NSR classes and the definitions of
10 them, I guess. Do you have that?

11 A. Yes, I do.

12 Q. One of the factors which would lead
13 to an area being NSR 5 is lack of access; am I correct?

14 A. That is correct.

15 Q. Could there be a situation, Mr.
16 Gordon, where an area which was depleted, was site
17 class 1 for black spruce or site class 1 or "x" for any
18 commercial species, and because of a lack of access
19 only it could be classified as NSR 5?

20 A. That is correct.

21 Q. Could you describe how that might
22 happen?

23 A. Perhaps the simplest example would be
24 where you have an ice bridge across a river and you are
25 going to harvest the stands on the other side of the

1 river in the winter and those stands on the other side
2 of the river are site class 1 and 2.

3 You go in and harvest that area and after
4 you take the wood out that winter the ice bridge
5 disappears, therefore, there is a lack of access to go
6 and treat that site, and if there is not sufficient
7 stocking, et cetera, it could not be classified as NSR
8 1 or 2 and, therefore, it could potentially be
9 classified as NSR 5 in that there is no access.

10 Q. And the cost of access would be more
11 than a certain amount of money?

12 A. Well, the reason you wouldn't go
13 across the river to treat it is because you couldn't
14 afford to spend the money getting across the river.

15 Q. Thank you. Mr. Armson, there is this
16 cross-examination I believe from Mr. Campbell, the
17 discussion regarding regeneration to specific species.

18 The question put to you was:

19 "The resource is not the trees, but is
20 the land which produces these trees" and
21 your answer was: "Yes".

22 The next question:

23 Therefore, to the extent that land base
24 will produce "x" or "y" or -- pardon me, "The extent to
25 which the land base will produce "x" or "y" is

1 important", your answer was: "Yes, that is why we have
2 moved along those lines."

3 What were you referring to me when you
4 said: Yes, that is why we have moved along those
5 lines?

6 A. I was referring specifically to the
7 development and preparation for management forester's
8 use of maps and other related information dealing with
9 the nature of the soils in the areas and, more
10 particularly, those soils -- attributes of those soils
11 which are important in determining relative levels of
12 productivity.

13 And I described that in terms of the --
14 certainly the regions in various ways within each of
15 those regions that comprise the undertaking.

16 Q. Thank you, Mr. Armson.

17 Mr. Gordon, Mr. Castrilli referred you to
18 Document 23 which commences on page 212 of the witness
19 statement. Perhaps you will turn to that page.

20 MR. GORDON: A. I have it.

21 Q. He asked you whether it was possible
22 that if fifth-year survival was reported in Document 23
23 you would expect the percentage to go down.

24 You answered that, based on your
25 experience, you would expect a reduction, but it may

1 not be the same reduction between second and fifth-year
2 survival that was recorded in MacKinnon's 1974
3 document, which I believe was marked as Exhibit 169.

4 And you said the reason that it might not
5 be the same reduction was because of improvements in
6 the 1980s in tending practices and abilities and you
7 made reference to the glyphosphate and site-preparation
8 being better in the 1980s. Do you recall the line of
9 questioning?

10 A. Yes, I do.

11 Q. My question though Mr. Gordon is:
12 Although you didn't have any results from fifth-year
13 survival assessments, do you have any survival
14 assessment data in the witness statement which will
15 allow a comparison to be made of survival assessments
16 or survival assessment results from the earlier
17 periods, before the improvements that you described, to
18 the results in the 1980s after the improvements were
19 made?

20 A. If you, for example, turn to Document
21 22, page 211, where we have stratified the second-year
22 survival results for the five management units by
23 decade; that is, 63-73 versus 74-84, what you can
24 generally see is an improvement in second_year survival
25 results in the second decade versus the first decade

1 and, specifically, dramatic improvements relative to
2 black spruce.

3 If we look at bare root black spruce, it
4 went, on those five management units, from 58 per cent
5 to 80 per cent in the second decade and for container
6 black spruce, it went from 58 per cent to 77 per cent.

7 Q. Now, that particular document refers
8 to two time periods which you have referred to.

9 The questioning of Mr. Castrilli began
10 with the Document No. 23 which is the next document
11 which are provincial summary of second-year survival
12 rates. And can you advise me, although those are the
13 reports of provincial summary reports as opposed to
14 information from the five specific management units
15 that you examined or the records were examined, turn to
16 page 214. Can any trend, conclusion or meaningful
17 observation be made by you, Mr. Gordon, by comparing
18 the results on page 214, which is for the period
19 1981-1986, to the results shown on page 211?

20 A. To be honest, I can't remember if I
21 lead that in evidence-in-chief or not, but there is no
22 question that if you look at the two time periods,
23 63-73, 74-84 and then the results for the latest time
24 period - and I recognize there is some overlap - for
25 the 81-82 to 86-87 period on page 214, you will see

1 that there is a continuing trend upward for the sample
2 involved.

3 Q. Perhaps you could take the results
4 from page 214 that you would be using and would you
5 sort of like -- have page 211 in front of you and
6 pretend there is a third column there, 1981-86 from
7 page 214. Could you list the results of the survival
8 assessments from page 214 then in my imaginary third
9 column on page 211?

10 A. Well, if we begin with the bare root
11 stock in jack pine, the third column would show 85 per
12 cent for jack pine, therefore, for those three periods
13 it would read, '83, '84 and then finally '85.

14 For black spruce, in the third column you
15 would have '81 and, therefore, it would show across the
16 three periods 58 versus 80 versus 81.

17 And then for white spruce, a fairly
18 dramatic improvement, you would have 82 in the third
19 column and it would show, therefore, for white spruce
20 bare root for the three periods beginning in '63 -- '56
21 and then up to '58 and then in '82.

22 Q. Just indicate on page 214, it
23 indicates that that particular result was based on a
24 small sample due to low planting levels?

25 A. No, I am sorry, Mr. Freidin, you may

1 be mistaken there.

2 Q. Container.

3 A. It is container there's an asterisk.

4 Q. I'm sorry.

5 A. And, of course, I think one of the
6 comments I made was that one of the reasons I would
7 anticipate that survival rates would tend to reduce
8 less now than as per Mr. MacKinnon's paper was because
9 of the improved tending techniques and, as well, the
10 availability of what we in the field call vision and
11 what we call glyphosphate.

12 And one of the sites where we definitely
13 use this chemical is on the upland sites where we plant
14 white spruce, and there is no question in my mind that
15 one of the reasons for this improvement in white spruce
16 relates to our improved tending practices on such
17 sites.

18 Q. All right. I don't want to take the
19 time for you to go and tell us what the numbers are, we
20 can read them for ourselves.

21 My last question for you is: If you look
22 on page 214, the three last numbers under container for
23 white spruce, white pine and red pine have this
24 asterisk beside them which indicate that they are based
25 on a small sample due to the low planting levels.

1 I would just like to have your
2 professional opinion as to whether -- for the purposes
3 of determining, in a very general way, whether there is
4 a trend one way or other, the Board could rely on those
5 results notwithstanding they are a low sample?

6 A. I would recommend that you discount
7 those three numbers with the asterisks because of the
8 very small sample.

9 And the reason I put them in was I didn't
10 want to have another asterisk there and, therefore,
11 have to explain why there was no number. So that's why
12 they are there.

13 MR. FREIDIN: That's my last question for
14 you, Mr. Gordon, and it is my last question for the
15 panel.

16 Thank you very much.

17 --- (Panel withdraws)

18 THE CHAIRMAN: Thank you, Mr. Freidin.

19 Ladies and gentlemen, it is twenty-five
20 to five. I do not know how everyone else feels,,
21 frankly, I think the panel feels it has been a long
22 day, and rather than start this morning, because I do
23 not think we are going to particularly -- necessarily
24 finish your panel, Ms. Blastorah, anyways tomorrow, why
25 don't we start off first thing tomorrow morning with

1 your panel.

2 MS. BLASTORAH: Mr. Chairman, of course I
3 never know how many questions we are going to receive
4 from the Board and one can never project too accurately
5 how quickly the evidence will go in. I still hope that
6 we will be able to finish putting in the
7 evidence-in-chief tomorrow and we are going to work
8 toward that end.

9 THE CHAIRMAN: Okay. Well, we will
10 commence at 8:30 and we will be prepared to sit until
11 as late as 2:00. And if it means getting very close to
12 finishing, we will try and squeeze in a short lunch.

13 MS. BLASTORAH: Thank you, Mr. Chairman.

14 THE CHAIRMAN: Thank you, ladies and
15 gentlemen.

16 ---Whereupon the hearing adjourned at 4:35 p.m., to
17 reconvene on Friday, August 26th, commencing at 8:30
18 a.m.

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